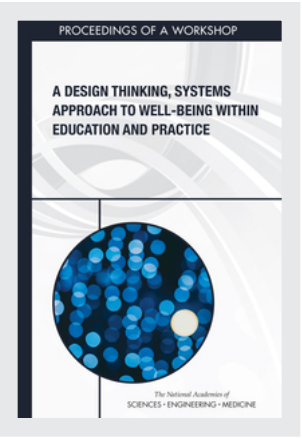

A Design Thinking, Systems Approach to Well-Being Within Education and Practice: Proceedings of a Workshop (2019)

DETAILS

112 pages | 6 x 9 | PAPERBACK
ISBN 978-0-309-47784-0 | DOI 10.17226/25151

CONTRIBUTORS

Patricia A. Cuff and Erin Hammers Forstag, Rapporteurs; Global Forum on Innovation in Health Professional Education; Board on Global Health; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine

SUGGESTED CITATION

National Academies of Sciences, Engineering, and Medicine 2019. *A Design Thinking, Systems Approach to Well-Being Within Education and Practice: Proceedings of a Workshop*. Washington, DC: The National Academies Press. https://doi.org/10.17226/25151.

A DESIGN THINKING, SYSTEMS APPROACH TO WELL-BEING WITHIN EDUCATION AND PRACTICE

PROCEEDINGS OF A WORKSHOP

Patricia A. Cuff and Erin Hammers Forstag, *Rapporteurs*

Global Forum on Innovation in Health Professional Education

Board on Global Health

Health and Medicine Division

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

THE NATIONAL ACADEMIES PRESS
Washington, DC
www.nap.edu

THE NATIONAL ACADEMIES PRESS 500 Fifth Street, NW Washington, DC 20001

This activity was supported by contracts between the National Academy of Sciences and Academic Collaborative for Integrative Health, Academy of Nutrition and Dietetics, Accreditation Council for Graduate Medical Education, Aetna Foundation, American Academy of Nursing, American Association of Colleges of Nursing, American Association of Colleges of Osteopathic Medicine, American Association of Colleges of Pharmacy, American Board of Family Medicine, American Board of Obstetrics and Gynecology/American College of Obstetricians and Gynecologists, American Council of Academic Physical Therapy, American Dental Education Association, American Medical Association, American Nurses Credentialing Center, American Occupational Therapy Association, American Osteopathic Association, American Physical Therapy Association, American Psychological Association, American Society for Nutrition, American Speech-Language-Hearing Association, Association of American Medical Colleges, Association of American Veterinary Medical Colleges, Association of Schools and Colleges of Optometry, Association of Schools and Programs of Public Health, Association of Schools of the Allied Health Professions, Athletic Training Strategic Alliance, Council on Social Work Education, Ghent University, Health Resources and Services Administration, Jonas Nursing and Veterans Healthcare, Josiah Macy Jr. Foundation, Michigan Center for Interprofessional Education, National Academies of Practice, National Association of Social Workers, National Board for Certified Counselors and Affiliates, National Board of Medical Examiners, National Council of State Boards of Nursing, National League for Nursing, Office of Academic Affiliations—Veterans Health Administration, Organization for Associate Degree Nursing, Physician Assistant Education Association, Society for Simulation in Healthcare, THEnet—Training for Health Equity Network, Uniformed Services University of the Health Sciences, University of Toronto, and Weill Cornell Medicine–Qatar. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project.

International Standard Book Number-13: 978-0-309-47784-0
International Standard Book Number-10: 0-309-47784-0
Digital Object Identifier: https://doi.org/10.17226/25151

Additional copies of this publication are available from the National Academies Press, 500 Fifth Street, NW, Keck 360, Washington, DC 20001; (800) 624-6242 or (202) 334-3313; http://www.nap.edu.

Printed in the United States of America

Suggested citation: National Academies of Sciences, Engineering, and Medicine. 2019. *A design thinking, systems approach to well-being within education and practice: Proceedings of a workshop*. Washington, DC: The National Academies Press. doi: https://doi.org/10.17226/25151.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The **National Academy of Sciences** was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, nongovernmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research. Dr. Marcia McNutt is president.

The **National Academy of Engineering** was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. C. D. Mote, Jr., is president.

The **National Academy of Medicine** (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health. Dr. Victor J. Dzau is president.

The three Academies work together as the **National Academies of Sciences, Engineering, and Medicine** to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at **www.nationalacademies.org**.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Consensus Study Reports published by the National Academies of Sciences, Engineering, and Medicine document the evidence-based consensus on the study's statement of task by an authoring committee of experts. Reports typically include findings, conclusions, and recommendations based on information gathered by the committee and the committee's deliberations. Each report has been subjected to a rigorous and independent peer-review process, and it represents the position of the National Academies on the statement of task.

Proceedings published by the National Academies of Sciences, Engineering, and Medicine chronicle the presentations and discussions at a workshop, symposium, or other event convened by the National Academies. The statements and opinions contained in proceedings are those of the participants and are not endorsed by other participants, the planning committee, or the National Academies.

For information about other products and activities of the National Academies, please visit www.nationalacademies.org/about/whatwedo.

PLANNING COMMITTEE ON A DESIGN THINKING, SYSTEMS APPROACH TO WELL-BEING WITHIN EDUCATION AND PRACTICE[1]

Mary Jo Kreitzer (*Co-Chair*), University of Minnesota
Zohray Talib (*Co-Chair*), The George Washington University
Kennita R. Carter, Health Resources and Services Administration
Sara J. Czaja, University of Miami
Kathrin (Katie) Eliot, Saint Louis University
Elizabeth Goldblatt, Academic Collaborative for Integrative Health
Catherine L. Grus, American Psychological Association
Aviad (Adi) Haramati, Georgetown University
Pinar Keskinocak, Georgia Tech
Sandeep "Sunny" P. Kishore, Icahn School of Medicine at Mount Sinai
Maryanna Klatt, The Ohio State University
Kimberlyn Leary, Harvard University
Ted Mashima, Association of American Veterinary Medical Colleges
Angelo McClain, National Association of Social Workers
Richard W. Valachovic, American Dental Education Association
Meghan M. Walsh, Hennepin County Medical Center
John Weeks, The Integrator Blog

Consultants

Joanna M. Cain, University of Massachusetts School of Medicine
Amy Aparicio Clark, Aetna Foundation
Darla Spence Coffey, Council of Social Work Education
Rachel Deussom, FHI 360
Patricia Hinton Walker, Uniformed Services University of the Health Sciences
Eric Holmboe, Accreditation Council for Graduate Medical Education
Ronald Kaluya, Counseling and Support Services, Kampala, Uganda
Beverly Malone, National League for Nursing
Diana Nyirenda, United Nations Development Programme, Lilongwe, Malawi
Kenneth R. Pelletier, University of California, San Francisco, School of Medicine

[1] The National Academies of Sciences, Engineering, and Medicine's planning committees are solely responsible for organizing the workshop, identifying topics, and choosing speakers. The responsibility for the published Proceedings of a Workshop rests with the workshop rapporteurs and the institution.

Rajata Rajatanavin, Mahidol University
Wendi K. Schweiger, National Board for Certified Counselors International
Siddharth Ashvin Shah, Greenleaf Integrative Strategies
Stephen C. Shannon, American Association of Colleges of Osteopathic Medicine
Deborah E. Trautman, American Association of Colleges of Nursing
Adrienne White-Faines, American Osteopathic Association
Xuejun Zeng, Peking Union Medical College

GLOBAL FORUM ON INNOVATION IN HEALTH PROFESSIONAL EDUCATION[1]

Caswell Evans (*Co-Chair*), University of Illinois at Chicago College of Dentistry
Deborah Powell (*Co-Chair*), University of Minnesota
Frank Ascione, University of Michigan
Timi Agar Barwick, Physician Assistant Education Association
David Benton, National Council of State Boards of Nursing
Joanna Cain, University of Massachusetts School of Medicine
Kathy Chappell, American Nurses Credentialing Center
Steven Chesbro, American Physical Therapy Association
Amy Aparicio Clark, Aetna Foundation
Thomas Warren Clawson, National Board for Certified Counselors, Inc. and Affiliates
Darla Spence Coffey, Council on Social Work Education
Malcolm Cox, University of Pennsylvania, formerly U.S. Department of Veterans Affairs
Darlene Curley, Jonas Nursing and Veterans Healthcare
Jan De Maeseneer, Ghent University
Marietjie De Villiers, Stellenbosch University
Kathrin (Katie) Eliot, Academy of Nutrition and Dietetics
Elizabeth (Liza) Goldblatt, Academic Collaborative for Integrative Health
Catherine Grus, American Psychological Association
Neil Harvison, American Occupational Therapy Association
Patricia Hinton Walker, Uniformed Services University of the Health Sciences
Eric Holmboe, Accreditation Council for Graduate Medical Education
Elizabeth Hoppe, Association of Schools and Colleges of Optometry
Emilia Iwu, Jonas Nursing and Veterans Healthcare
Pamela Jeffries, The George Washington University
Sandeep (Sunny) Kishore, Young Professionals Chronic Disease Network
Kathleen Klink, Veterans Health Administration
Andrew Maccabe, Association of American Veterinary Medical Colleges
Laura Magaña Valladares, National Institute of Public Health
Lucinda Maine, American Association of Colleges of Pharmacy
Beverly Malone, National League for Nursing
Mary E. (Beth) Mancini, Society for Simulation in Healthcare

[1]The National Academies of Sciences, Engineering, and Medicine's forums and roundtables do not issue, review, or approve individual documents. The responsibility for the published Proceedings of a Workshop rests with the workshop rapporteurs and the institution.

Angelo McClain, National Association of Social Workers
Lemmietta G. McNeilly, American Speech-Language-Hearing Association
Mark Merrick, Commission on Accreditation of Athletic Training Education
Donna Meyer, Organization of Associate Degree Nursing
Joel Nelson, Health Resources and Services Administration
Warren Newton, American Board of Family Medicine
Bjorg Palsdottir, Training for Health Equity Network (THEnet)
Miguel Paniagua, National Board of Medical Examiners
Rajata Rajatanavin, Mahidol University
Scott Reeves, Kingston University & St. George's, University of London
Edward Saltzman, American Society for Nutrition
Lucy Savitz, Kaiser Permanente
Susan Scrimshaw, The Sage Colleges
Nelson Sewankambo, Makerere University College of Health Sciences
Stephen Shannon, American Association of Colleges of Osteopathic Medicine
Javaid I. Sheikh, Weill Cornell Medicine–Qatar
Susan Skochelak, American Medical Association
Richard (Rick) Talbott, Association of Schools of the Allied Health Professions
Zohray Talib, The George Washington University
Maria Tassone, University of Toronto
George Thibault, Josiah Macy Jr. Foundation
Deborah Trautman, American Association of Colleges of Nursing
Michelle Troseth, National Academies of Practice
Richard (Rick) W. Valachovic, American Dental Education Association
Alison J. Whelan, Association of American Medical Colleges
Adrienne White-Faines, American Osteopathic Association
Holly Wise, American Council of Academic Physical Therapy
Xuejun Zeng, Peking Union Medical College
Brenda Zierler, University of Washington

Health and Medicine Division Staff

Patricia A. Cuff, Senior Program Officer
Ambar Saeed, Research Associate
Anna Fahlstrom, Senior Program Assistant
Daniel Cesnalis, Financial Associate
Julie Pavlin, Board Director, Board on Global Health

1967–2018

Scott Reeves, Ph.D., M.Sc., PGCE
Professor in Interprofessional Research
Centre for Health and Social Care Research
Kingston University & St George's, University of London
Faculty of Health, Social Care and Education

Reviewers

This Proceedings of a Workshop was reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the National Academies of Sciences, Engineering, and Medicine in making each published proceedings as sound as possible and to ensure that it meets the institutional standards for quality, objectivity, evidence, and responsiveness to the charge. The review comments and draft manuscript remain confidential to protect the integrity of the process.

We thank the following individuals for their review of this proceedings:

Kasey Farrell, Health Resources And Services Administration
Beverley Malone, National League for Nursing
Kenya McRae, American Osteopathic Association
Stephen C. Shannon, American Association of Colleges of Osteopathic Medicine

Although the reviewers listed above provided many constructive comments and suggestions, they were not asked to endorse the content of the proceedings nor did they see the final draft before its release. The review of this proceedings was overseen by **Carol Pearl Herbert,** University of British Columbia. She responsible for making certain that an independent examination of this proceedings was carried out in accordance with standards of the National Academies and that all review comments were carefully considered. Responsibility for the final content rests entirely with the rapporteurs and the National Academies.

Contents

Acronyms and Abbreviations

AIDS	acquired immune deficiency syndrome
APA	American Psychological Association
BOTA	British Orthopaedic Trainees' Association
CCI	Compassionate Care Initiative
GDP	gross domestic product
HIV	human immunodeficiency virus
NASW	National Association of Social Workers
OSU	The Ohio State University
PICU	pediatric intensive care unit
R2H	Routine to Happiness
RCVS	Royal College of Veterinary Surgeons
UVA	University of Virginia
VA	U.S. Department of Veterans Affairs

1

A Design Thinking, Systems Approach to Well-Being

INTRODUCTION TO THE WORKSHOP

The mental health and well-being of health professionals is a topic that is "broad, exceptionally relevant, and urgent to address," said Zohray Talib, a member of the workshop planning committee who helped lead the charge. Stress in the health professions is "so ubiquitous, it is almost inevitable." It is both a local and a global issue, and affects professionals in all stages of their careers, said Talib. To explore this topic, the Global Forum on Innovation in Health Professional Education (the Forum) held a 1.5-day workshop, titled A Systems-Approach to Alleviating Work-Induced Stress and Improving Health, Well-Being, and Resilience of Health Professionals Within and Beyond Education.

This workshop was the result of a multiyear discussion among members of the Forum, who knew of many ongoing conversations about stress and burnout in virtually all of the health professions, and in many parts of the world. These forum members, said Talib, wanted to find a unique value the Forum could bring to this conversation. The group—who also assisted with the planning of the workshop—identified several ways the Forum could contribute and further the conversation. First, the Forum brought together participants from more than 19 different health professions, and, as such, "the inter-disciplinary aspect makes this conversation particularly unique," said Talib. Second is the leadership perspective, as most of the participants on the Forum and at the workshop are leaders in the health professions field, in both education and practice. Finally, said Talib, the Forum chose to look at stress, burnout, and well-being from a systems level,

rather than emphasizing individual actions or programs that are aimed at well-being. To better understand the issues and to guide the structure of the workshop, individual members of the planning committee reached out to more than 40 leaders in both the health and education sectors to hear about the challenges and successes they have experienced in their time as leaders. A synopsis of these conversations is found in Appendix C of this report.

The planning committee gleaned several insights from these conversations with leaders that built on personal experiences. First, whether health professionals are working in an urban hospital in the United States or a rural health clinic in the mountains of Tajikistan, stress and burnout are ubiquitous. Second, even in disparate settings with varying resources, the issues faced by health professionals around the world are similar, including financial stresses, problems with infrastructure, moral stress and compassion fatigue, and difficulties with power and hierarchy among professionals. Talib noted the different manifestations these stressors display depending upon the context. Most urgently, said Talib, is the need to address health professional well-being because of the significant effects it has throughout the system. Stress and burnout of the workforce affect patient outcomes and patient experiences. Well-being affects workforce turnover, which can affect quality of care. Finally, health professional well-being affects the financial bottom line of health systems; these effects are important to acknowledge as they "often drive change," concluded Talib.

Talib walked participants through the objectives and the structure of the workshop (see Box 1-1 for the Statement of Task). She described the goal of the workshop as providing participants with "seeds of different examples of how others have addressed this issue," with the hope that participants will return to their own systems with fresh ideas and perspectives on making changes. The workshop focus, said Talib, is on a design thinking, systems approach that is human centered, while also considering how all the pieces of a system work together. Talib emphasized that the workshop "is not the beginning and the end" but rather an inflection point for participants to reflect, continue the conversation, and drive progress forward.

DESIGN THINKING, SYSTEMS APPROACH

Mary Jo Kreitzer, a member of the planning committee who worked with Talib in setting the foundation for the workshop, is also the founder and director of the Earl E. Bakken Center for Spirituality and Healing at the University of Minnesota. Kreitzer introduced the workshop participants to the concept of a "design thinking, systems approach." This concept is a combination of two different perspectives on making change: a *systems thinking* approach and *design thinking* approach. A systems approach, said Kreitzer, looks at problems and potential solutions through the lens of

BOX 1-1
Statement of Task

An ad hoc committee will plan and conduct a 1.5-day public workshop to explore systems-level causes and downstream effects of job-related stress affecting all health professions working in learning environments, both in clinical and classroom settings. In collaboration with the National Academy of Medicine, the committee will seek to identify examples drawn from around the world that demonstrate how different professions cope with the stresses of educating health professionals under current health and educational structures, and how adjustments in policies and incentives might move organizations to adopt a more welcoming environment for testing and implementing individual stress-reduction and resilience-building strategies.

The workshop could open discussions on such questions as:

- What is the role of leadership for creating an enabling environment where stress-reduction and resilience training strategies can be tested and implemented?
- How might financial incentives be altered to allow education and health institutions the freedom to promote health and well-being among its faculty and providers?
- Could leadership development in self-care strategies alter future organizational structures?
- What sorts of policy shifts could incentivize leaders of education and health institutions to want to make a culture shift and positive organizational changes toward healthier work environments?
- What might be the downstream effects of policy changes promoting friendlier, more collaborative work environments?

the entire system (see Box 1-2 for components of a systems approach). A change in one part of the system can have dramatic effects on other parts of the system—for better or for worse. This is why it is important to look at each component of the system and how one profession or work unit interacts with other parts of the system so an intervention in one part of an organization does not negatively affect other parts, Kreitzer continued.

By identifying the root causes of problems, and teasing out dynamics that could be shifted, organizations can avoid or minimize the potential for unintended consequences. To illustrate this idea, Kreitzer gave the example of a health system that is suffering from a high degree of burnout among its staff. One of the factors causing burnout may be the stress of perpetually working with not enough staff, possibly because of budgetary constraints or because of a high staff turnover rate. High turnover rates have a variety of root causes that include a failure of leadership, stressful work environ-

BOX 1-2
Components of a Systems Approach

- Definition of the problem
- Root cause analysis
- Ideation
- Simulation, optimization, analytics
- Implementation
- Evaluation

SOURCE: Kreitzer's presentation, April 26, 2018.

ments, or a lack of financial and other resources, said Kreitzer. There will no doubt be other reasons specific to a single organization that should be fully explored, but it is the thought process that Kreitzer emphasized. Change agents should investigate potential causes of burnout until all of the factors leading to burnout within the organization are understood. Kreitzer said that one benefit of this systems approach is that "unless you really know what the problem is, it is so easy to throw solutions that may or may not have an impact."

Design thinking, continued Kreitzer, is a specific and thoughtful process for identifying the problems within a system and for developing potential solutions. It is "based on the simple yet radical idea that the people who face the problem every day are most likely the ones who hold the keys to the solutions." Kreitzer noted that the process for identifying problems and solutions often entails "getting smart people together in a room" to discuss the issue and to impose a top-down solution. By contrast, design thinkers work with multiple stakeholders who actively engage in identifying the problems and remedies so the resulting solutions are the product of a collaborative, thoughtful, and iterative effort from various perspectives.

As described by Tim Brown (2009), design thinking encompasses three aspects: desirability, feasibility, and viability. The goal of desirability is to fully understand the problems within the organization by asking what people are "hearing and seeing and feeling and thinking." This process of identifying the "deeply felt needs" of various stakeholders is sometimes referred to as human-centered design or empathy, said Kreitzer. The second aspect—feasibility—requires stakeholders and planners to look at what is possible in the organization in terms of existing and potential capacity, human resources, processes, and technology. Finally, the third aspect is vi-

ability, which requires considering how a change can be implemented and sustained over time. Kreitzer said that it is critical to think about how an initiative can be "hardwired into the organization" so it has a higher likelihood of continuing long past the point of implementation.

Desirability, feasibility, and viability describe the issues to be discussed during a design thinking process. The process itself, said Kreitzer, can be described in the three phases of inspiration, ideation, and implementation. In the inspiration phase, perspectives from all stakeholders are gathered through methods including literature searches, individual and group interviews, listening, observation, and shadowing. In the ideation phase, stakeholders brainstorm and discuss potential solutions, preferably in a creative and welcoming environment. Once ideas are identified, they can be implemented in order to test prototypes. Rather than trying to perfect an idea before implementation, design thinking uses an iterative process of testing and refining in order to find a solution that works for all stakeholders.

During the course of the workshop, said Kreitzer, participants will hear about individual and organizational strategies that have been used to address health professional well-being in various settings. She urged participants to keep both the systems approach and the design thinking process in mind while listening to these presentations. Participants should listen for ways in which small changes affected entire organizations, she said, and ways in which stakeholders were engaged and active in the process of problem solving. Kreitzer introduced the speakers for the first session—Tim van de Grift and Pinar Keskinocak—who presented case studies of projects that used aspects of design thinking or a systems approach in both education and practice.

CASE STUDIES: APPLYING DESIGN THINKING AND SYSTEMS APPROACHES

Design Thinking as a Tool for Interdisciplinary Education in Health Care

Tim C. van de Grift, Vrije Universiteit (VU) University Medical Center Amsterdam

van de Grift, psychiatry resident at the Vrije Universiteit (VU) University Medical Center Amsterdam, talked about his experiences in applying design thinking as a tool for interprofessional education in health care. He called attention to the rapidly changing health care environment where health professionals and educators are expected to adapt to these changes while keeping up with the ever-increasing influx of new knowledge. These transformations and pressures create an environment of uncertainty and stress. Design thinking is useful in this context, said van de Grift, because

it teaches people how they can influence and change their environment. Quoting Buckminster Fuller, he said "The best way to predict the future is to design it" (Bruton, 2012). The same is true for an environment—the best way to fix an unproductive workplace is to be actively involved in redesigning it. van de Grift emphasized points made earlier by Kreitzer that design thinking requires collaboration, empathy, creativity, agency, and problem solving. He defined design thinking as "a method to structurally assess situations, to reduce the uncertainty, and to work towards a certain focus, design prototypes, and finally design specific solutions."

"The best way to predict the future is to design it."

—R. Buckminster Fuller

At the University of Amsterdam, van de Grift and his colleagues developed a 6-month course on design thinking called "Hacking Healthcare" (van de Grift and Kroeze, 2016). Medical and psychology students were teamed up with art students and asked to design solutions for health care providers, using the "inspiration, ideation, implementation" approach (see Figure 1-1). While Figure 1-1 presents the three phases as linear, van de Grift noted, it is an iterative process in which ideas are continually tested against stakeholder perspectives and refined.

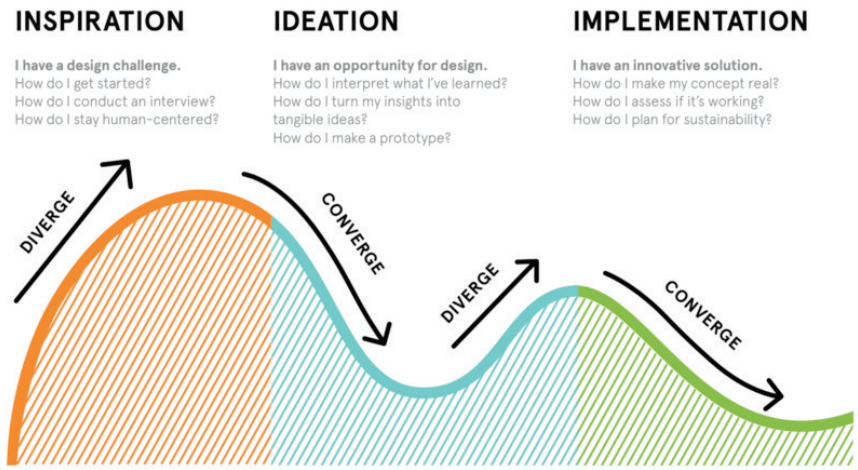

FIGURE 1-1 Inspiration, ideation, implementation.
SOURCE: Presented by van de Grift, April 26, 2018. Used with permission from IDEO.org.

Inspiration

The inspiration phase, said van de Grift, focuses on getting a problem statement and a user profile: what is the core problem that needs to be addressed, and who is the end user of the design? For this phase, it is critical that students gather as much information as possible about as many stakeholders as possible. One interesting method for doing so, said van de Grift, is participatory research such as shadowing patients during their hospital stay. This type of research gives students insight on the patient experience and may spark ideas of how to improve. However, van de Grift noted that one pitfall of the observation process is that sometimes researchers only see what they are expecting to see. Another potential problem in this phase is involving only the most accessible stakeholders; van de Grift stated the importance of engaging stakeholders who are more skeptical of the process or from lower resource environments. After researchers have made conclusions based on the initial information gathered during this phase, it is critical they return to the stakeholders in order to ensure they have correctly interpreted the information and made appropriate conclusions.

As an example of the research performed by students at the University of Amsterdam, van de Grift described the efforts of students who had been tasked with designing a more humane psychiatric ward. The students stayed overnight at the ward, went to a museum, took surveys, conducted interviews, and talked with staff and patients about how they would design the space. From all of their research, the students discovered it was the way the ward was designed that prevented a more patient-centered focus. This realization led to a spatial redesign that included a working station and coffee bar to promote more informal interactions between staff and patients (see Figure 1-2).

Ideation

The phase of ideation is about generating solutions to a specific problem, said van de Grift. He recommended that "really low resource" methods be used for this phase—papers, cardboard, sticky notes—in order to get "quick and rough" kinds of ideas. It is important to "go wild" during this phase, van de Grift said, and to not let issues of feasibility get in the way of generating ideas. Once some solutions are identified, it is essential to go back to the stakeholders to get their feedback and to incorporate their advice into the next round of ideation. If planners try to finalize ideas before they get feedback from stakeholders, emphasized van de Grift, it makes it less likely that stakeholders will give their honest opinions.

As an example of the ideation phase, van de Grift shared his students' work at a home for dementia patients. The students had already identified a

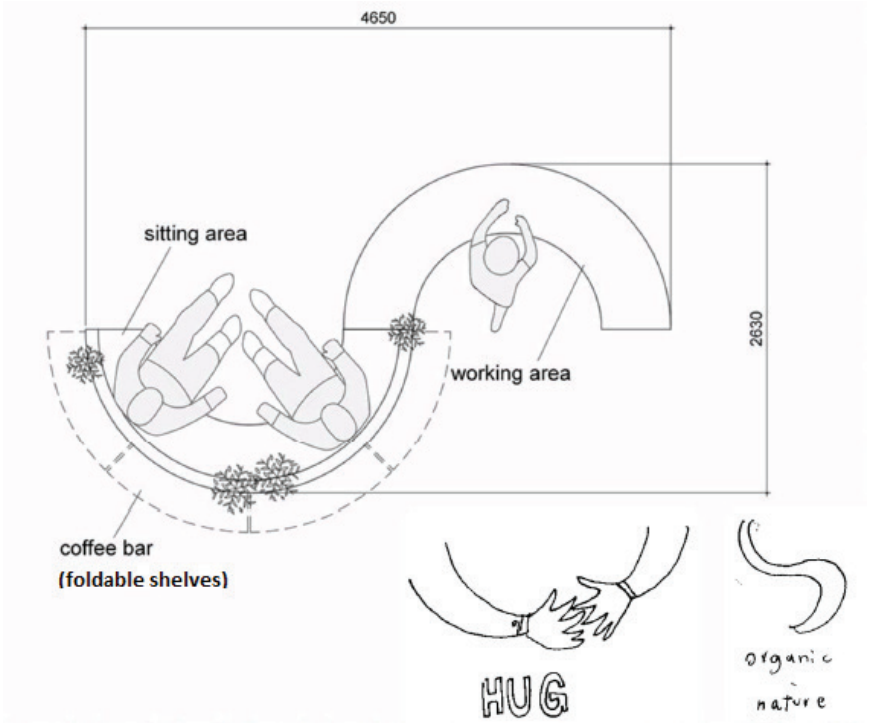

FIGURE 1-2 Design for a more humane psychiatric ward.
SOURCE: Presented by van de Grift, April 26, 2018.

problem: the home did a good job of welcoming people to the community, but it did not have a space or rituals for patients to discuss loss of their own identity or loss of other patients. To begin the problem-solving process, students and patients gathered together to discuss ideas while also making art with clay; this art project provided patients who struggled with expressing themselves verbally with another outlet for sharing their ideas. The solution, developed by patients, was to have a plate-drawing workshop, where each patient would represent their own identity on a plate. Once per week, the patients would use the plates during lunch and discuss their losses.

Implementation

No matter how carefully planned a solution is, it cannot be put into place and sustained without a thought-out implementation plan, said van de Grift. An implementation plan can resemble a business plan, with the

costs and revenues at each step of implementation laid out. An alternative way of presenting an implementation plan is through a "user journey," where each step of using the new product or system is laid out from the perspective of the user. The format of an implementation plan will vary depending on the context of the organization. For example, some organizations may require a large evidence base before implementing a program, while other organizations may require a detailed cost analysis.

In conclusion, van de Grift said the design thinking process provides a structure for interdisciplinary and interprofessional partners and stakeholders to collaborate on solving problems, and it does so while giving stakeholders agency and the ability to influence their own environment.

In response to van de Grift's presentation, workshop participants shared their own experiences with stakeholder-based problem solving. Susan Scrimshaw, a forum member, shared a story about her work in health clinics in Panama. To get perspectives from all stakeholders in the clinics, the clinic staff came together in a circle and performed role-plays of problematic interactions. For example, staff acted out examples of rudeness to a patient, or of a staff member being condescending to another staff member. Scrimshaw said that this exercise was useful in two ways. First, it treated all the staff members—from janitors to doctors—as equals; and second, it allowed people to put themselves in others' shoes and empathize with their experiences.

Brenda Zierler, a forum member, told participants about her experience using an approach similar to design thinking in combination with "liberating structures," a framework for facilitating conversations in order to get everyone engaged (Center for Health Sciences Interprofessional Education Research and Practice, 2017). A heart failure care team was experiencing challenges with communication, nurse retention, staff turnover, and patient satisfaction that resulted in poor outcomes overall. Zierler's team brought the staff together to talk about how they communicated and worked together, and how improvements could be made. Zierler said that while her team "had lots of ideas of how they could improve," it was essential that the ideas come directly from the staff. One technique they used to gather ideas was to have everyone write down their "boldest idea" for improving the function of the team, and then cards were passed around and read anonymously. Another approach Zierler used with the group was something she called "What I need from you." In this exercise, representatives from each area present—including medicine, nursing, patients, and social work—each thought about what they could ask of the other professions to make things work better. For example, the nurses asked the physicians to show up at the same time every day before rounds. The physician representative discussed this idea with the other physicians, figured out whether it was possible and

what changes would need to be made, then returned to the nurses with an answer that was either yes, no, or we will try.

Systems Engineering to Reduce Stress and Burnout in Health Systems

Pinar Keskinocak, Georgia Institute of Technology

Keskinocak, William W. George Chair and professor in the Stewart School of Industrial Engineering at the Georgia Institute of Technology, and director of the Center for Health and Humanitarian Systems, spoke about using a systems approach to improve the well-being of health professionals. First, Keskinocak emphasized the complexity of health systems: there are multiple stakeholders, different types of physical spaces, limited resources, objectives and incentives that are sometimes misaligned, and uncertainty around patients' arrival times to their appointments, surgery durations, staff availability, and the volume and types of patients arriving at an emergency department. Partly because of the complexity of the system, there are a number of factors that contribute to stress and burnout among health professionals:

- Work demands and pressures not matched to knowledge, abilities, and needs
- Insufficient support from supervisors and colleagues
- Little control over work processes
- Unsatisfactory working conditions, such as workload, pace, and hours
- Culture of the work environment
- Poor design or management of the system

These factors can affect mental and physical health, absenteeism, turnover rates, errors, and patient outcomes, said Keskinocak. Initiatives to improve the well-being of health professionals have largely focused on supporting individuals—for example, mindfulness training, support groups, and skills training. Initiatives that focus on changing the system are much less common, but they have the potential to be more effective. Examples of system-level interventions include changes to policies or programs, redesigning processes or workflows, changing incentive structures, reworking protocols, and improving scheduling. Making a change at the system level, and more importantly, carefully evaluating the effect of a change in one part of the system, not only locally but on the entire system, has the potential to create a work environment that facilitates wellness, rather than exacerbate stress. Keskinocak used a quote by Mark Greenawald to elucidate the fact that while individual-level changes may be beneficial,

they can only have so much effect without systems-level changes: "You can teach physicians mindfulness and meditation techniques, but if you throw them back to the war zone it's not going to work" (*U.S. News & World Report*, 2016).

A Systems Engineering Approach

Keskinocak laid out a systems engineering approach for improving the well-being of health professionals and the functioning of health organizations.[1] There are three steps for assessing the current state of the situation, she said. First, one should start by identifying the symptoms—where are the problems and who is affected by these problems? Second, the magnitude of the problem should be measured or quantified to the extent possible. Third, any and all potential root causes of the problems should be identified, as well as possible bottlenecks that could exacerbate an already crowded system. She emphasized that sometimes the root may lie elsewhere in the system, not necessarily where the symptoms are observed, and hence, a careful evaluation of the entire system is needed.

After these three steps are completed, a road map toward an improved state can then be built with interventions that are designed to improve the system. Part of the road map should include an assessment of potential effects of the interventions in various parts of the system and the stakeholders, such as how the interventions will affect the cost of care, quality of care, and access to care. Keskinocak emphasized the importance of developing solutions that are based on an understanding of what the stakeholders view as helpful or valuable. Finally, once a plan is implemented, it is important to evaluate the actual effect of the changes made, and circle back for future improvements. Evaluation is critical for addressing unforeseen consequences, scaling up a program, and adding to the knowledge base of what does and does not work.

With this systems approach in mind, Keskinocak told workshop participants about four different initiatives that made broad modifications directed at changing the environment, rather than individuals. One was designed specifically to reduce clinician burnout. It resulted in a drop in burnout rates from 53 percent to 13 percent, along with a rise in productivity, making this a cost neutral program (Wright and Katz, 2018). The second was a pilot project that used outside funding to offer incentives to those who engaged in activities that typically go unrecognized, such as mentoring, serving on committees, and filling shifts for colleagues who need support. Those who received the rewards—including time for academic pursuits or

[1] See Chapter 3 for a description of systems engineering application through a breakout group discussion.

home assistance like house cleaning and meal delivery—felt a greater sense of support. There was also less turnover in that department.

Keskinocak's third example of an initiative drew from the Carilion Clinic, a large health system in Virginia with 7 hospitals, 1 medical school, 240 health care facilities, and more than 12,000 employees. A survey of the health workers uncovered high rates of burnout among members of their staff: 59 percent of physicians, 65 percent of residents in specialty training, and 50 percent of medical students, physician assistants, and nurse practitioners (AMA Wire, 2018). By identifying and correcting inefficiencies in the system, clinicians found they had more time to spend with patients. These adjustments improved patient and clinician satisfaction.

The fourth and final initiative Keskinocak described looked at workflow in a new pediatric intensive care unit (PICU). Keskinocak explained that processes used in the old PICU did not translate well to the new space. To address these workflow issues, Keskinocak and her colleagues mapped the current state of the rounding process to better understand individuals' movements in the system and where there were identified opportunities for change. There was substantial stakeholder involvement in the entire process; nurses, patients, families, and physicians provided feedback about the current situation and ideas about how to improve coordination. The rounding process was streamlined by implementing standardized routines, reducing variation and waste at each step, and focusing on the essential components (Vats et al., 2012). One change that was particularly interesting from a systems perspective, said Keskinocak, revolved around how radiology rounds were done. Originally, the providers would go to a different floor to view images and then return to patient rooms. However, available technology meant that images could be viewed in patients' rooms. Making this change allowed providers to discuss images with patients and save time traveling to a different floor.

REFERENCES

AMA (American Medical Association) Wire. 2018. *Alarming survey results spark 7 system changes to buck burnout*. https://wire.ama-assn.org/practice-management/alarming-survey-results-spark-7-system-changes-buck-burnout (accessed June 20, 2018).

Brown, T. 2009. *Change by design: How design thinking transforms organizations and inspires innovation.* New York: HarperCollins.

Bruton, D. 2012. Design education and institutional transformation. In *Computational design methods and technologies: Applications in CAD, CAM and CAE education*, edited by N. Gu. Hershey, PA: IGI Global. Pp. 351–364.

Center for Health Sciences Interprofessional Education Research and Practice. 2017. *Heart failure teams transforming relationships*. https://collaborate.uw.edu/2017/02/2747 (accessed June 20, 2018).

IDEO.org. n.d. *Our approach*. https://www.ideo.org/approach (accessed July 5, 2018).

U.S. News & World Report. 2016. *Diagnosis: Burnout*. https://www.usnews.com/news/articles/2016-09-08/doctors-battle-burnout-to-save-themselves-and-their-patients (accessed June 29, 2018).

van de Grift, T. C., and R. Kroeze. 2016. Design thinking as a tool for interdisciplinary education in health care. *Academic Medicine* 91(9):1234–1238.

Vats, A., K. H Goin, M. Villarreal, T. Yilmaz Gozbasi, J. Fortenberry, and P. Keskinocak. 2012. The impact of a lean rounding process in a pediatric intensive care unit. *Critical Care Medicine*. 40(2):608–617.

Wright, A. A., and I. T. Katz. 2018. Beyond burnout—redesigning care to restore meaning and sanity for physicians. *New England Journal of Medicine* 378(4):309–311.

2

Creating a Culture of Well-Being

"WHAT BRINGS YOU JOY?"

Much of the ongoing conversation about the well-being of health professionals focuses primarily on stress and burnout, said Kreitzer. However, she said, perhaps a better perspective would be to focus on creating a culture of well-being by proactively helping people to find joy in their work. Looking at an issue through a different lens, said Kreitzer, leads us down a path toward different types of solutions. Asking "Why are people leaving and why are they turning over and why are they stressed and burned out?" will lead us down one path for addressing well-being, said Kreitzer. But asking people "What brings you joy?" can lead us down a path that is ultimately more positive, fruitful, and sustainable, she said. According to Kreitzer, an organization whose leadership promotes a culture of well-being will be more resilient, more capable of handling change, and more responsive to the needs of their employees.

Ted Mashima, planning committee member and moderator of the session, opened with a quote often attributed to Peter Drucker: "Culture eats strategy for breakfast" (Campbell et al., 2011). He explained that specific strategies for improving performance at an organization are far less effective than a cultural shift that supports optimum performance and well-being. Creating a shift in culture requires persistence, optimism, and leadership. Workshop participants heard from several speakers who have been part of a cultural shift at their organizations.

INTERPROFESSIONAL COMPASSIONATE CARE

Dorrie Fontaine, University of Virginia

In 2009, Dorrie Fontaine, dean and professor at the University of Virginia (UVA) School of Nursing, spent 8 days at Upaya, a contemplative retreat in New Mexico, along with other health professionals from UVA. The focus of the retreat was end-of-life care, and in the years following the retreat, workshops were held at UVA to introduce students and professionals in multiple disciplines to a contemplative perspective toward caring for those at the end of life. In 2013, the Compassionate Care Initiative (CCI) was established at UVA (2018) in order to:

> cultivate a resilient and compassionate healthcare workforce—locally, regionally, and nationally—through innovative educational and experiential programs … and to have safe and high functioning health care environments with healthy and happy health care professionals and where heart and humanness are valued and embodied.

CCI's programs seek to create compassionate and resilient leaders that will in turn create compassionate and resilient workspaces, said Fontaine. Teaching today's students to focus on self-care and compassion will, it is hoped, "create an army of really compassionate patient care providers," she said. While it is situated within the school of nursing, CCI is an interprofessional effort, with programs by and for people in multiple health professions, said Fontaine. In fact, at UVA, all third-year nursing and medical students are trained together in order to create understanding of each other's roles. Programs offered through CCI include resilience retreats; yoga, meditation, and tai chi practices; and lectures, simulations, and discussions on topics such as listening, connection, and engaging with patients. A recent evaluation of CCI found that nurses who trained in CCI at UVA were more likely to practice meditation, exercise, yoga, breathing exercises, and writing, compared to nurses who trained at other schools (Cunningham et al., 2018). While there is not yet any formal evaluation of the program's effect on patient care and engagement, Fontaine noted that preliminary data about nurse self-care is encouraging.

One of the most well-known initiatives to come out of UVA is called "the Pause," in which health care providers join together in a moment of recognition and reflection after losing a patient. Jonathan Bartels, a nurse affiliated with CCI, created the Pause as a way for health providers to acknowledge their own hard work and the life of the person that was lost. Working as a trauma care nurse, he had noticed that after a death, he and his colleagues would just "rip their gloves off and go out in the hallway to more patients," with no chance to process what had just happened or to

reset themselves to get back to work. The Pause has spread far and wide; it was first picked up by other UVA departments and now exists in nearly 100 hospitals on four different continents, said Fontaine. She also described reaching across sectors where her students have enrolled in classes on design thinking for compassion through architecture. Through the use of design thinking in clinical practicums and elsewhere, said Fontaine, people are changing the way they look at aspects of routine practices.

After Fontaine's presentation, Aviad Haramati, a member of the planning committee, asked her what the levers were that allowed the culture at UVA to shift. More specifically, Haramati asked, "What was the key there? Was it you walking the walk? Was it getting the opinion leaders? Was it the transformative experience?" Fontaine answered that the key element was "making friends and colleagues and having a generous spirit." She explained that upon arriving at UVA, she made an effort to be visible and to get to know everyone on campus. To fund the program, she reached out to alumni, donors, foundations, and others. Fontaine said instead of programming based on the money that was currently available, she decided what she wanted to do and found the money to do it. She joked that her optimism was genetic; her mother used to say "Anyone can have fun in the sun!" when the family was out "picnicking in the pouring rain." Fontaine explained that she wants to institute an "epidemic of optimism" instead of focusing on the costs and barriers to implementing these types of programs.

DESTIGMATIZATION FROM THE TOP: MIND MATTERS

Lizzie Lockett, Royal College of Veterinary Surgeons

Lizzie Lockett, Royal College of Veterinary Surgeons (RCVS) in the United Kingdom, first explained how the unique structure of her organization allows her to work on *shifting* culture. The principal function of the RCVS is as a statutory regulator, but it also is a royal college, so it can advance standards of the profession and "enable veterinary surgeons and veterinary nurses to be the very best that they can be," Lockett said. Unlike pure regulators, the RCVS was set up by a charter giving them the latitude to be more innovative in how they engage with their constituency through leadership and other strengthening efforts for the profession, such as the RCVS's mental health initiative.

Lockett said that within the veterinarian profession in the United Kingdom, there are high levels of poor mental health. This is caused by high levels of stress and has unfortunately led to a number of veterinarians taking their own lives. Various factors contribute to and exacerbate this situation, she said. There is stigma around mental health in the profession, with veterinarians wanting to be "in control of the situation" and not "show weak-

ness," said Lockett. Many veterinarians are isolated, either geographically or in terms of working on their own as consultants, without colleagues to talk to. Veterinarians also have access to medications that can enable them to take their own lives. Lockett emphasized how the RCVS can encourage veterinarians and veterinary nurses to take steps to address their own mental health, but a lack of awareness and resources, as well as stigma, make it unlikely that people can or would do it on their own.

The RCVS has set day one competencies—things they expect new graduates to be able to do—in the area of mental health. First, they must "understand the economic and emotional context in which the veterinary surgeon operates" and "know how to recognize the signs of stress and how to seek support to mitigate the psychological stress on themselves and others." Second, students are required to "demonstrate ability to cope with incomplete information, deal with contingencies, and adapt to change." Lockett noted the challenges faced by anyone trying to attain these mental health competencies could be particularly daunting for new graduates to meet, so the RCVS has developed assistance programs like those situated within their Mind Matters Initiative.

The Mind Matters Initiative was launched in 2015, with funding of £1 million over 5 years. Part of the funding goes to one-on-one support for individuals, which is carried out at arm's length by independent charities, while the rest is used to develop tools, techniques, trainings, and campaigns to address mental health and wellness. Recently, RCVS has paired up with the American Veterinary Medical Association to promote the project internationally. The campaign currently consists of about 30 different interventions, with three main work streams focused on prevention, protection, and support (see Figure 2-1).

FIGURE 2-1 Well-being interventions.
SOURCE: Presented by Lockett, April 26, 2018.

Lockett noted that while it is critical to help the people who are currently struggling with mental health problems, efforts must be made to change the systems to prevent people from developing mental health problems in the future. To do so, the "prevent" work stream looks at issues, including

- How are veterinary undergraduates prepared for their work? Do their expectations of work and the realities match?
- What factors are causing stress in the workplace? Which of these factors can be changed?
- How can veterinarians be supported in the workplace with strong social networks?

While these types of systematic changes are under way, the campaign also focuses on giving individuals the skills and tools they need now to protect themselves from stress and burnout, while also providing organizations the tools they need to improve.

The "protect" work stream is developing mental health awareness training courses, online mindfulness courses, and specific courses for managers on how to support others while staying healthy themselves. The "support" work stream helps individuals who are currently dealing with mental health issues, which is done through a separate charity organization. According to Lockett, a key element of Mind Matters is the partnerships between a wide variety of stakeholders representing students, educators, practice managers, nurses, business owners, and others.

One particularly successful Mind Matters program is called "& Me," said Lockett, that focuses on destigmatizing mental health within the veterinarian profession. She quickly added that destigmatization requires shifting the culture; it cannot be done through simple one-off programs or education. Destigmatization will only occur if people "feel the organization really lives and breathes" the commitment to mental health, and when there are "spaces where people can feel they can talk about their mental health and their stress." Lockett explained that one essential component of destigmatizing mental health is having senior leaders within the profession talk openly about their own mental health. The "& Me" program, run jointly with the Doctors' Support Network in the United Kingdom, seeks to do this through presentations by leaders from both the human and veterinary medical professions who have "struggled with their mental health, who were now flourishing, who could give the idea that a diagnosis doesn't determine the rest of your professional career." For example, veterinarian David Bartram, a "rock star" researcher in mental health in the veterinary profession, shared his own story about mental health: "I firmly believe that had I confided and sought help early, I would not have become unwell.

Don't worry that disclosure may affect your career. It should not, and your health must come first" (Mind Matters, 2017). The program holds events but primarily runs online messages through social media, sharing stories about leaders and inviting discussion and comments. The leaders who have shared their stories have found support online and in person, and have been praised for coming forward, said Lockett. The campaign has been extended to include a student-led activity called "Failure Fridays," in which senior people in the field talk about instances where they experienced failure and how they moved on.

"I firmly believe that had I confided and sought help early, I would not have become unwell. Don't worry that disclosure may affect your career. It should not, and your health must come first."

—David Bartram

In conclusion, said Lockett, the campaign is about "hope, taking personal responsibility, showing senior leadership, the power of collaboration, and encouraging help-seeking behavior." She further noted the campaign's cost-effective programs that rely predominantly on volunteers to offer their stories, and an online platform for a majority of their outreach. She closed with messages to the diverse audience saying efforts are under way to extend the campaign to other health professions, as well as to other countries.

EVIDENCE-BASED TOOL FOR CHANGE: THE HAPPINOMETER

Sirinan Kittisuksathit and Charamporn Holumyong, Mahidol University

Sirinan Kittisuksathit, associate professor at the Institute for Population and Social Research at Mahidol University in Thailand, introduced workshop participants to the "Happinometer," an evidence-based tool that was developed to help organizations measure and improve their employees' happiness (Institute for Population and Social Research, n.d.). The Happinometer measures nine different dimensions of "Happy":

- Body
- Relax
- Heart
- Soul
- Family
- Society
- Brain
- Money
- Work–life balance

These dimensions were chosen and developed by a committee of multidisciplinary experts in quality of life, well-being, happiness, and mental health, said Kittisuksathit. The committee drew on a breadth of theoretical constructs and research, including Maslow's hierarchy of needs (1954) and the *World Health Organization Quality of Life* (2018). The Happinometer was tested for validity and reliability on all nine dimensions. The Happinometer is like a thermometer for measuring happiness, said Kittisuksathit. After happiness is measured, unhappy dimensions can be identified, and activities can be developed and implemented to reduce unhappiness.

More than 5,000 organizations—including both governmental and private, small and large—and 1,000,000 individuals have used the Happinometer. When an organization commits to using the Happinometer, the organization's staff completes the questionnaires, which are available on paper, online, or in a mobile app, and in 10 different languages. The resulting happiness levels can be presented individually or as organizational averages. Additionally, happiness levels can be assessed on a national level; these data can be used to identify where citizens could use some help and to measure changes over time. The Happinometer was first used to measure national happiness in Thailand in 2012. The lowest dimension was Happy Relax (see Figure 2-2), while the highest dimension was Happy Soul, said Kittisuksathit.

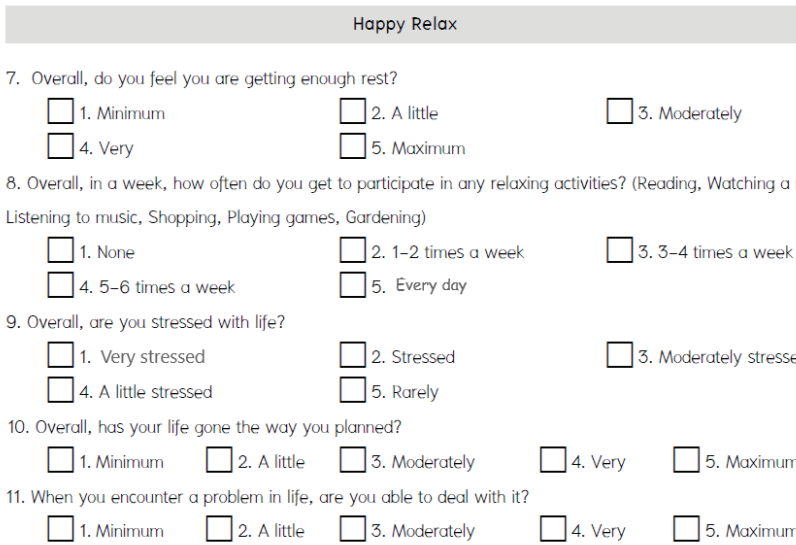

FIGURE 2-2 Happy Relax sample questions of the Happinometer.
SOURCE: Presented by Kittisuksathit and Holumyong, April 27, 2018.

Kittisuksathit said that when they first developed the tool, they could diagnose happiness levels but did not have a method to improve happiness. They developed a curriculum called Routine to Happiness (R2H), which is used to identify and train "happiness agents." These agents are trained to manage and evaluate the data from the Happinometer, and to develop a Happiness Action Plan for happiness activities. To make a Happiness Action Plan, one must identify an objective for the activity and a target population, specifying desired outcomes, budget, time, and process. Kittisuksathit gave an example of a Happiness Action Plan for an activity to improve Happy Family (see Figure 2-3). The activity would be conducting events for families to walk and run together. The short-term output measure would be "number of employees who took their family members to join the events." The medium-term outcome goal would be an increase in the average score on Happy Family, and the long-term goal would be an increase in the average overall happiness score. The happiness agents can develop and implement these action plans, and are trained in monitoring and evaluation so they can assess the effectiveness of the plans.

After Kittisuksathit's presentation, she and her colleague, Charamporn Holumyong, assistant professor at Mahidol University, led workshop participants in an interactive session. Participants were given a set of data on a hypothetical organization, similar to what happiness agents work with, and asked to identify an area for improvement and to develop an idea for an activity. For example, the individual participants in the group that was assigned Happy Body noticed that about three-quarters of people reported exercising less than three times per week. To increase employees' physical activity, the participants in the group decided that the organization should offer a fitness center, and should also encourage physical activity through incentives such as a day off for people who logged the most minutes of activity. Holumyong noted that when developing activities, it may be important to consider the age, gender, or culture of employees to find activities

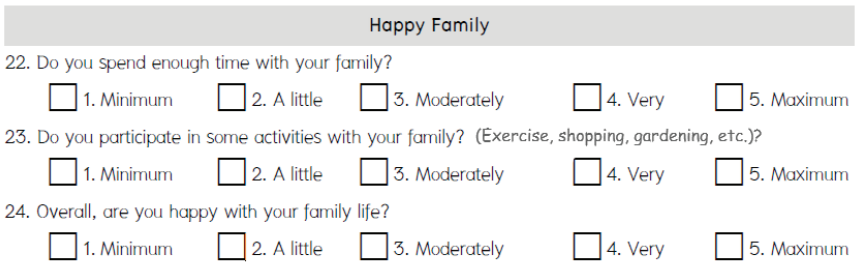

FIGURE 2-3 Happy Family sample questions of the Happinometer.
SOURCE: Presented by Kittisuksathit and Holumyong, April 27, 2018.

that are most appropriate and effective. This is why, she said, it is critical to have happiness agents from inside the organization, rather than using outside experts. Internal happiness agents know and understand the culture of the workplace and can design the activities for the needs of the organization and its employees. Talib noted that this is a similar concept to the design thinking approach—that the people who are most affected by an organization's culture and policies are the ones best suited to find ways to change it.

UNIVERSAL CARE IN THAILAND

Rajata Rajatanavin, Former Minister of Public Health in Thailand

In 2002, Thailand began offering universal health care coverage to its population, said Rajata Rajatanavin, former minister of public health in Thailand and former president of Mahidol University. Thailand has a population of 68.9 million, and spends about 4.6 percent of its gross domestic product (GDP) on health care, in contrast to the United States, which spends around 18 percent of its GDP on health care (World Bank, 2015). There are two reasons why Thailand can offer universal care, said Rajatanavin. First, Thailand has an extensive infrastructure of health care. The country is divided into provinces, districts, and subdistricts. Each subdistrict covers around 3,000 to 5,000 people, and has one primary care center. Each district has a hospital for secondary care, and each province has at least one provincial hospital for tertiary care. Finally, there are regional hospitals that provide quaternary care. Second, said Rajatanavin, Thailand produces its own doctors, nurses, and other health care workers, and can also provide wide varieties of subspecialty training in the country.

Patients are overwhelmingly satisfied with universal coverage in Thailand, said Rajatanavin. As shown in Figure 2-4, satisfaction in 2006 was at 83 percent, and was at more than 95 percent in 2017. This is in contrast to health care providers whose satisfaction in their jobs was not high. In 2006, 50 percent of providers were satisfied, which increased to 67 percent in 2017 (National Health Security Office, 2018). Rajatanavin said he is "not surprised" by these numbers, because when patients enjoy increased access to health care, this means an increase in workload for providers. Investigators found one particularly stressful component of work for medical providers is the number of hours they are required to work as medical interns. After graduation, medical students in Thailand must spend 3 years working as interns in rural areas before they are eligible to do further specialty training. These interns—who learn in secondary, tertiary, and university hospitals—work a huge number of hours, said Rajatanavin. Around 60 percent of interns work more than 100 hours per week, with about 10 percent working more than 140 hours per week (Buppasiri et al., 2012).

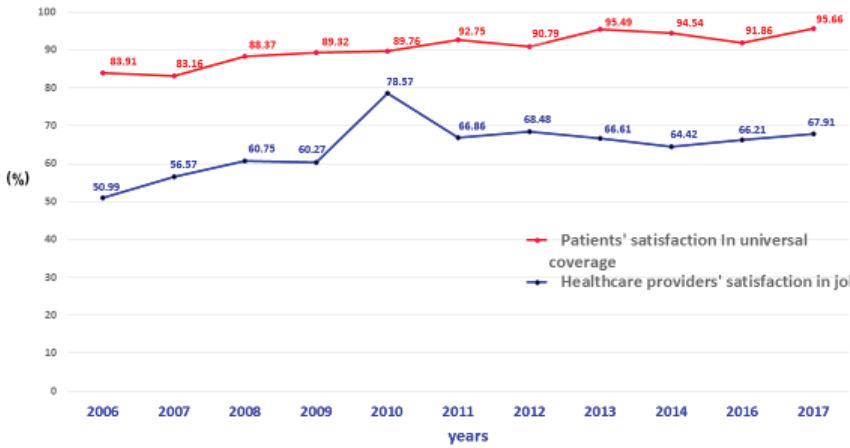

FIGURE 2-4 Satisfaction in universal coverage.
SOURCES: Presented by Rajatanavin, April 27, 2018; National Health Security Office, 2018.

Rajatanavin described several steps that were taken in recent years to alleviate this problem, and to strengthen the medical system as a whole. First, the Ministry of Public Health focused on improving primary health care, so people received medical and preventative care close to home, rather than ending up in a distant hospital. Second, the Ministry of Public Health issued a policy that every hospital in the country must have a palliative care program. According to Rajatanavin, there is an aging population in Thailand that is in need of better care for chronic disease and terminal illnesses. Third, the Thai Medical Council announced that interns should not work more than 40 hours per week. This is an announcement, not a directive, said Rajatanavin, but it is a good first step toward fixing the problem. The fifth and final step was a 20-year plan launched by the Ministry of Public Health to strengthen the health workforce. The plan included cultivating a culture of core values; strengthening human workforce potential in the areas of business, management, leadership, and professionalism; plotting a road map for organizational happiness, including a new Chief Employee Experience Officer; and using the Happinometer to measure and improve happiness in the workforce. Figure 2-5 shows the results of the Happinometer survey from the Ministry of Public Health staff in 2017, where the leadership found that the staff scored lowest on Happy Relax and Happy Money.

Category	Point
1. Healthy body	65.54
2. Relaxation	55.69
3. Altruism	68.43
4. Spiritualism	70.47
5. Happy family	65.92
6. Good social	62.48
7. Search for knowledge	62.69
8. Good finance	50.65
9. Happiness in work	61.52

FIGURE 2-5 Happinometer results for the Thailand Ministry of Public Health personnel.
NOTE: The Happinometer was used to assess happiness/stress in 298,793 out of 384,536 (79 percent) Ministry of Public Health personnel from April 18 to June 30, 2017. The average respondent's age was 39 years, and 76 percent of participants were female.
SOURCES: Presented by Rajatanavin, April 27, 2018; Thailand Ministry of Public Health, 2017.

REFERENCES

Buppasiri, P., P. Kuhirunyaratn, P. Kaewpila, N. Veteewutachan, and J. Sattayasai. 2012. Duty hour of interns in university hospital and hospital in ministry of public health. *Srinagarind Medical Journal* 27(1):8–13.

Campbell, D., D. Edgar, and G. Stonehouse. 2011. In *Business strategy: An introduction*. London, UK: Palgrave Macmillan. P. 263.

Institute for Population and Social Research. n.d. *Happinometer*. http://www.happinometer.ipsr.mahidol.ac.th (accessed June 29, 2018).

Maslow, A. H. 1954. *Motivation and personality*. New York: Harper & Row.

Mind Matters. 2017. *David Bartram's speech—House of Commons &Me launch 31 January 2017*. https://www.vetmindmatters.org/david-bartrams-speech (accessed June 27, 2018).

National Health Security Office. 2018. *Report of 2017 survey of public, providers and related agencies' satisfaction of universal health coverage*. Bangkok, Thailand: National Health Security Office.

Thailand Ministry of Public Health. 2017. *Report of the survey of quality of life, happiness, and organization engagement of personnel of Ministry of Public Health*. Bangkok, Thailand: Thailand Ministry of Public Health.

UVA (University of Virginia). 2018. *About*. https://cci.nursing.virginia.edu/about (accessed June 27, 2018).

World Bank. 2015. *World development indicators*. http://data.worldbank.org/data-catalog/world-development-indicators (accessed August 10, 2018).

World Health Organization. 2018. *The World Health Organization quality of life*. http://www.who.int/mental_health/publications/whoqol/en (accessed June 27, 2018).

3

Breakout Session Discussions

The workshop participants divided into subgroups to learn about and discuss various initiatives implemented in Africa, the United Kingdom, and the United States. While the breakout group topics varied considerably—from yoga for students, to policies about bullying, to mental health counseling in rural regions of Africa, to a systems engineering approach—all had similar aims of improving the well-being of providers, learners, and communities, and to do so through systematic changes that could build or result in stronger organizational resilience. These topics were selected by the workshop planning committee (see page v) that was charged with selecting a diverse set of issues to explore in greater depth through small group discussions. Summaries from the breakout session reflect the dialogue of the group and should not be construed as consensus statements.

BREAKOUT SESSION ONE: POLICY CHANGE THROUGH EVIDENCE-BASED EMPOWERMENT

Megan Walsh, chief academic officer at Hennepin County Medical Center in Minneapolis, introduced the breakout session with two speakers who have been a part of bottom-up cultural shifts. Simon Fleming, past president of the British Orthopaedic Trainees' Association (BOTA) told the audience about a program called Hammer It Out, while Calli Schardein, a student at Oklahoma State University Center for Health Sciences, and a member of the Council of Osteopathic Student Government Presidents, talked about her advocacy for mental health in medical students.

A Grassroots Approach to Policy Change Through Orthopedic Trainees

Simon Fleming, British Orthopaedic Trainee's Association

Fleming led off by describing a BOTA survey performed roughly 2 years ago asking orthopedic trainees about bullying, undermining, and harassment. Because BOTA wanted a true and complete picture of the trainees' experiences, it took several steps to ensure a high response rate: BOTA assured complete anonymity, it promised it would act on whatever it found, and it offered respondents the chance to win money to cover the cost of their exams. The survey had approximately 60 percent response rate, and the results, said Fleming, "blew us away." The survey asked whether respondents had experienced bullying, undermining, or harassment, and if the respondents had witnessed colleagues being treated in these ways. Roughly 73 percent of trainees had witnessed a colleague being bullied, undermined, or harassed, and 23 percent had heard sexist, homophobic, or racist language used (BOTA, 2018). With these numbers in hand, BOTA created the Hammer It Out campaign in an attempt to change the culture of orthopedics. Fleming noted a fair amount of resistance among some senior people in orthopedics to this change; they had been trained in this culture, did not see it as a problem, and felt defensive about being told they were doing something "wrong." To mitigate this resistance, BOTA presented it as a "better way of learning, a better way of training, a better way of teaching people," rather than pointing fingers and disparaging the traditional culture in orthopedics.

Fleming compared BOTA's model of cultural change to tectonic plates—little changes add together and "eventually you realize the world has moved underneath your feet." BOTA started by asking people to commit to changing their own personal behavior, which is both "the simplest and the hardest thing," said Fleming. When a person changes his or her behavior, he or she becomes a role model and creates a positive culture within the team, Fleming said. Eventually, people start to notice those happier teams, resulting in patients preferring to be treated by those teams, and residents wanting to work in the environment creating the happier teams. Such outcomes are infectious. After Hammer It Out, other departments and specialties took notice and were inspired to make their own changes—similar initiatives were implemented by emergency departments, general practitioners, and internists. These small changes eventually become large changes, said Fleming: "If you change your specialty, you start to change hospitals and if you start to change hospitals, you change health care, and if you change health care, eventually, because everyone, everyone, has to interact with health care, that's how you change the world. And it all starts with personal change."

"If you change your specialty, you start to change hospitals, and if you start to change hospitals, you change health care and if you change health care, eventually, because everyone, everyone, has to interact with health care, that's how you change the world."

—Simon Fleming

A Grassroots Approach to Policy Change Through Osteopathic Student Government

Calli Schardein, Oklahoma State University Center for Health Sciences

Schardein shared her story about a similar bottom-up program that resulted in broad changes. It all started, said Schardein, when she received a call during her second year of medical school. A first-year student was distressed and suicidal, and the student called Schardein seeking help. Schardein was the student government president at the time, but did not have any knowledge or resources about how to support the student, and could only suggest that she be taken to the emergency room. After this scary situation was resolved—the student survived—Schardein knew she had to do something to improve mental health among medical students and to increase access to resources. She ran for vice-chair of the Council of Osteopathic Student Government Presidents of the American Association of Colleges of Osteopathic Medicine, and performed a survey of what resources were available on campuses, what initiatives were working, and what could be done better. The results, she said, were eye opening and revealed areas where small tweaks could result in big changes to culture. For example, at one school, the campus counseling center had glass walls; students were reluctant to seek help because everyone would know they were there. With the results of this survey, Schardein and her colleagues went to the leadership at the American Osteopathic Association Commission on Osteopathic College Accreditation. The accrediting body was receptive and supportive, said Schardein, and new standards were implemented that required schools to have certain resources in place to be accredited.

Breakout Session One Discussion

After the presentations, participants in the breakout session asked questions and discussed the lessons learned from these experiences. One participant requested both presenters elaborate further on the role policy played in effecting these changes. Fleming responded that in the case of bullying in the orthopedic profession, policies were already in place but they were being ignored. BOTA and its partners worked to rewrite and update

policies, and to get people to take the policies seriously. Fleming said, "It's kind of embarrassing … that we should have a policy that says don't be racist but it seems to be something that we need to have." In addition, the association's survey and the Hammer It Out campaign put bullying on the agendas of other organizations and accrediting bodies, such as the General Medical Council—the independent regulator of medical schools in the United Kingdom. There had been previous surveys about mistreatment in the field, but many of these surveys suffered from underreporting; BOTA pointed out the problems with these surveys and encouraged other organizations to put bullying "on their agendas."

Schardein remarked about similar policies within the osteopathic profession, but the policies were not specific enough to be useful. For example, accredited schools were already required to have 24-hour access to mental health care. What this means in reality is that if a student has a problem in the middle of the night, they could access an online scheduling service to make an appointment for the next day. Obviously, said Schardein, if a student is in crisis at 2:00 am, the promise of a next day appointment may be too late, especially if the student is suicidal. The accreditors are currently working on a way to update and improve this policy. Another policy effort has been getting the board of deans to collaborate on a list of resources and best practices to be shared with other schools, particularly newer schools that need help getting started. Some of the policies that have been identified as best practices, said Schardein, include an on-campus psychiatrist who has no interaction with or influence over students other than counseling sessions; schools with free fitness and wellness programs; and schools with fun community-building activities such as "food truck Wednesday."

Another participant asked Fleming about how to encourage open and honest reporting of bullying, while also not ostracizing those who are accused of bullying. Fleming said they are trying to create a "culture where accusations of bullying or harassment … are accepted with open arms." He explained that while people are often "a bit upset" to hear they have been accused of mistreating their colleagues, it opens the door to a conversation about improving their communication style and shifting the notions of what is acceptable behavior. For example, Fleming knows of a trauma unit that wrote up a charter explaining the expectations for behavior and communication within the unit, and posted the charter on the wall. When a colleague deviates from these expectations, the charter serves as a formal way to actively address and correct the behavior and to enforce a new culture.

The breakout session participants also discussed the widespread culture within medicine that encourages practitioners—particularly students and residents—to "say yes" to everything, to work as much as possible, and to not complain or speak out. Fleming said what is needed is a cultural shift toward a system where all professionals are encouraged to ask for help,

where senior professionals actively supervise and train junior professionals, and where colleagues openly communicate about how they can support each other.

Finally, participants discussed the importance of keeping the patient at the center of care. Fleming recalled a story about a patient liaison who reminded him that the patients can hear the interactions between the health professionals who are treating them. As obvious as it might be, said Fleming, it is easy for providers to forget that when they are demeaning or bullying a colleague, patients are listening and forming opinions about their care team. Making an effort to improve communication between health professionals does not only have benefits for the professionals themselves, but also the patients they treat. Fleming emphasized that in health care, there is always a patient, and initiatives should keep these patients and their perspectives in mind at all times.

BREAKOUT SESSION TWO: CREATING A MINDFUL ENVIRONMENT

Maryanna Klatt, The Ohio State University

Klatt, professor in the Department of Medicine at The Ohio State University (OSU), focuses on creating mindful environments for health providers. Until 2011, she taught mindfulness and stress reduction for people of various professions. Although she usually worked in academic environments, Klatt found that people from all professions deal with the same issues. She told workshop participants about an experience when she was called in to help with stress reduction for trash collectors. She had assumed, based on her limited knowledge of trash collection, that the primary source of stress would be the physical difficulty of the job. She found, however, that just like the surgeons, executives, nurses whom she had worked with in the past, the refuse collectors dealt with similar stresses—favoritism among colleagues, too much to do in too little time, equipment not working, and inefficient systems.

One morning while at her office at OSU, she noticed construction workers outside doing yoga and meditation for 20 minutes before beginning their work. She talked to the workers who reported multiple benefits from the stress-reduction exercises. In particular, the manager had seen a dramatic reduction in accidents and their workers' compensation costs had gone down "astronomically." This experience made Klatt ask, "Why is this not happening inside the hospital? If this type of practice benefits construction workers, why not see if it can help health providers feel more focused, less stressed, and provide better care?" This flash of insight led Klatt to begin the process of instituting mindful practices and improving the work

environment for health care providers. This work always begins with a full assessment of the environment in which people work, and an understanding of the issues they face. Klatt gave an example of a project she had done for the radiological sciences department at OSU, where she surveyed the employees and shadowed people through their daily routines. What she found was that imaging techs were largely working alone in patient rooms with heavy equipment that placed physical strain on their bodies due to the awkward positioning of the machines. As a result, the techs suffered from a high prevalence of musculoskeletal discomfort, particularly lower back pain. In addition, the techs were frustrated with a lack of control over their workflow, and felt stressed from dealing with patients by themselves.

To begin the process of improving the work environment for these techs, Klatt used a design thinking approach. She wanted the techs themselves to think through the issues, brainstorm ideas, and develop solutions that would work for them. Klatt and her team talked to people at all levels of imaging to gain their perspectives and opinions about how to improve the situation. The design that was ultimately generated, said Klatt, was a process for imaging that helped the techs perform their work without damaging themselves, while at the same time offered an opportunity for the tech to connect with the patient. It involves allowing the patient to help themselves get positioned, having the tech take deep breaths, and encouraging techs to make eye contact with the patient. This process, called "mindful cueing," is being taught to the students at OSU not just in a handout or textbook, but through a mindful process of breathing, relaxing, and visualization. In addition, students are being taught to ask for help with patients, and are being introduced to a simple daily mindful yoga practice to help them focus their attention and be present in their health care delivery. The hope, said Klatt, is that by teaching these lessons in school, the students will be prepared and will have the tools to be successful once in practice. One participant also added that students can be powerful role models; when practicing health care professionals see students taking 5 minutes to breathe, focus, and visualize their next procedure, they may be interested in trying these techniques themselves. Change is happening, one breath at a time.

BREAKOUT SESSION THREE: PROMOTING WELL-BEING IN LOW-RESOURCE ENVIRONMENTS

Javaid Sheikh, Weill Cornell Medicine–Qatar; Diana Nyirenda, United Nations Development Programme, Malawi; and Ronald Kaluya, Uganda Counseling and Support Services

Javaid Sheikh, professor of psychiatry and the dean for the Qatar campus of the Weill Cornell Medical College, oriented the breakout ses-

sion participants to the speakers and to the topic. He began with Diana Nyirenda, who is a program associate within the United Nations Development Programme in Malawi; she spoke about the mental health challenges with living and working in a developing country. Likewise, Ronald Kaluya of the Uganda Counseling and Support Service described the difficulties he and his colleagues face providing interventions in rural Uganda within villages that lack even the most basic of needs like clean water and medical care. Both Nyirenda and Kaluya collaborate with the National Board of Certified Counselors International Division, applying their train-the-trainer model for mental health counseling.

Malawi, said Nyirenda, has high rates of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS), including among children and young people. In these communities that have been stricken with poverty and disease, health care workers try to balance the reality of low resources with a high demand for care, in a high-stress environment. Traditionally, people in this region sought advice and counseling from elders in their communities; however, Nyirenda said, "they have reached the point where they cannot do it anymore" because of the sheer number of young people and the increasingly global and social context in which they live. The young people in Malawi make up 60 percent of the population, and have been hard hit by the AIDS epidemic, with most having lost one or both parents, and with grandparents suffering from dementia. To fill the need for counseling and support for these communities, Nyirenda has been involved in a program to recruit and train community counselors. So far, they have trained more than 1,150 counselors, although she noted the country's lack of standardization or ethics to govern community counseling result in slow acceptance by some communities. Because of this, she said, "we are not sure if we are doing the right thing. Much as we have been trained, there is a gap in the policies that govern the profession." The fledgling group of community counselors gather together to discuss what they have encountered in the communities and to reflect on their experiences, in the hopes of learning from others' successes.

Nyirenda conveyed a story about a retired health care worker, a midwife, who had returned to work in a rural setting within the Lilongwe District at age 75. Rural areas were hard hit by AIDS, and many health care workers left the profession or the country to seek other opportunities because of stress and burnout. In her career the midwife has assisted in more than 20,000 live births in remote villages. Most of these deliveries are done in the dark with no source of light or running water. She has seen young women hemorrhage to death before, during, or after delivery. She was on a monthly contract with a district health office owing to a shortage of midwives when the incident happened. She still delivered an average of 800 babies per year, but a horrific incident one night got her thinking hard

about turning her back on the profession she has cherished all her adult life. In a dark labor ward, and without any hospital attendant to assist her, she accidentally cut the forehead of a baby during a routine passage extension she had performed thousands of times before. The backlash from the baby's mother, her family, and community in rage did not recognize her selfless service to the community at her above retirement age. According to Nyirenda, community members wondered if she came back from her retirement to kill them all. This story, said Nyirenda, demonstrates the need for support and mental health counseling for health providers in Malawi. For example, newly graduated health care workers were choosing to stay in urban areas where the working conditions were not as difficult.

Kaluya works in a region called Bulike in rural Uganda. Eight years ago, when Kaluya returned to Uganda from the United States, Bulike was hugely underresourced—there was no clean water, no schools, no medical care, and high rates of morbidity and mortality. As Kaluya put it, "People were living day by day … and had no hope for tomorrow." Kaluya began his work by opening a mobile medical clinic that could travel to the villages in the region. He found that some of the patients who came to the clinic were not physically sick, but "emotionally sick," and benefitted from having someone to talk to at the clinic. However, the clinic workers were being burdened by having to play the role of nurse, advocate, community mobilizer, and mental health provider, said Kaluya. In addition, the workers were largely functioning in isolation, with no colleagues or peers to share the stress of the job with; this can be "very overwhelming" and health workers were breaking down.

Kaluya's organization, Uganda Counseling and Support Services, trains and supports mental health counselors from and for the communities of Bulike (Uganda Counseling and Support Services, 2018). By taking on the burden of mental health, these counselors free up the medical care workers to concentrate on physical health. Around 200 counselors have been trained; Kaluya said they chose to train people who were respected in the community and who could use their influence to promote acceptance of the program. While it is sometimes difficult to focus on mental health in a region that has so few resources, Kaluya said it is important to treat the entire person: "As we treat the body, we ought to treat the soul."

"As we treat the body, we ought to treat the soul."

—Ronald Kaluya

Both Nyirenda and Kaluya pointed to privacy and confidentiality as major obstacles to providing mental health services in these financially poor environments. In Malawi and in Uganda, many of the counseling sessions take place in open spaces (such as gardens) because of a lack of funding to build physical structures. Everyone can see who is going to counseling. Kaluya said this is

problematic in Uganda because men, in particular, are hesitant to share their feelings with others or to cry, because of the fear of being perceived as weak.

Breakout Session Three Discussion

A breakout session participant asked Nyirenda and Kaluya how they themselves cope with the stress of working in these environments and dealing with others' mental health issues. Nyirenda said she stays strong because she believes "a counselor is supposed to be the one standing when the whole community is falling." This belief gives her the energy to get up every day and keep going. She is also buoyed by her strong religious faith and her passion for helping children through guidance and mental health counseling. Kaluya said he is uplifted by looking at the amazing progress they have made over the past 8 years in Bulike, and this keeps him going when times are tough.

"A counselor is supposed to be the one standing when the whole community has fallen."

—Diana Nyirenda

Finally, the participants discussed the issue of providing mental health counseling in communities that lack basic needs. Nyirenda told the story of a young woman she was seeing for counseling, who told her that she did not have money for transportation to get to future counseling sessions. Nyirenda paid for transportation out of her pocket to facilitate the ongoing counseling relationship, as this would have led to premature termination of sessions. Kaluya said that in Bulike, they have relied on creativity and collaboration in order to fulfill the basic needs of the communities. The organization focuses on not just providing day-to-day care, but on establishing sustainable structures in the community (e.g., a school). As Kaluya's organization moves on to another community, these structures can continue to be a place to get help and resources.

BREAKOUT SESSION FOUR: APPLYING SYSTEMS ENGINEERING

Pinar Keskinocak, Georgia Institute of Technology, and Sara Czaja, Weill Cornell Medicine

Keskinocak (see Chapter 1 for her introductory remarks) and Czaja, director of the Center on Aging and Behavior Research at Weill Cornell Medicine, led workshop participants in a breakout session discussion about applying systems engineering to health professionals' well-being. First, Czaja showed a diagram that conceptualized a system—it is made of components that are independent and interact with each other (see Figure 3-1).

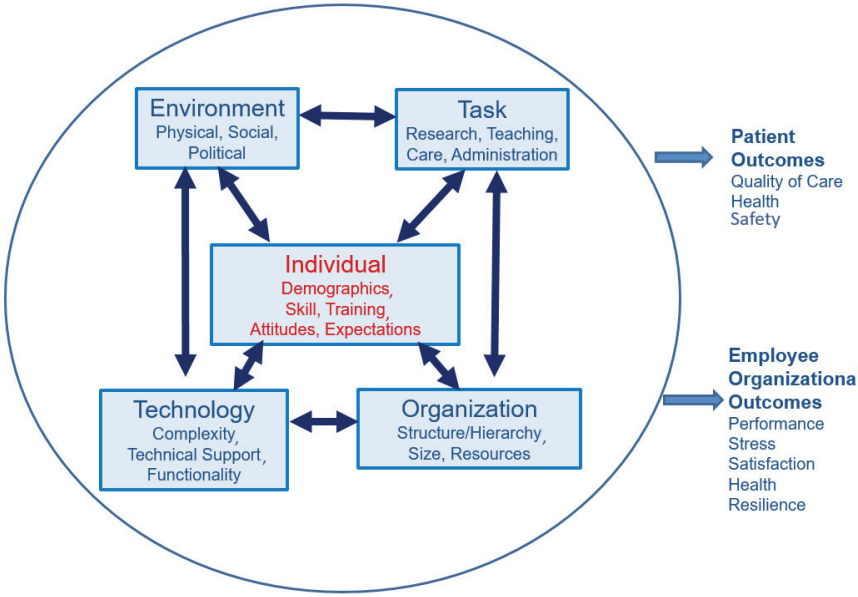

FIGURE 3-1 Conceptualization of a system.
SOURCES: Presented by Czaja and Keskinocak, April 26, 2018. Adapted from Smith and Sainfort, 1989.

Systems are intended to operate as a whole, with a shared vision of objectives and goals, said Czaja. For example, an academic health center might have the goals of caring for patients, conducting research, training students, supporting the community, and raising financial support. System components are interdependent—a change in one component "reverberates and impacts other components," she said. System relationships are maintained by defined processes, including patterns, roles, and structures within the system. Systems are not static. By their very nature, they evolve and can be influenced by external forces. Finally, said Czaja, systems are incredibly complex, particularly in the world of health care.

Keskinocak and Czaja led the breakout session participants in an exercise in which they asked participants to rotate from one station to the next discussing in small groups the following three questions from a systems perspective:

1. What are the major causes of stress and burnout at your workplace?
2. What are some of the effective practices for addressing some of these issues?

3. If an organization tried to improve wellness or well-being, what were some of the unintended consequences of the initiative?

Breakout Session Four Discussion

After each small group rotated through the stations, the entire breakout session of participants gathered together to reflect and share their observations. One participant found listing the stress and burnout factors as the easiest thing to do noting, "none of us had a shortage of those." Another participant concurred, and added that all of the participants could relate to the stress and burnout factors listed, even though they all came from different types of systems. When it came to listing effective practices, it became clear to one participant that even the best-intentioned intervention in a system could cause problems in other parts of the system because it is a "never-ending cycle." She asked, "Which is the less of the evils when you are trying to fix" all of the issues in a system?

The participants concluded with a discussion about the appropriate role of systems engineers or other experts in facilitating a systems-level change in a health organization. Keskinocak expressed her perspective saying it is not always necessary for an external expert to be involved. The important piece, she said, is bringing together the perspectives of all the different stakeholders involved in a system in order to create a holistic view of the situation and to develop potential solutions. Whether or not an outside consultant is brought in, it is imperative that stakeholders from the system buy in to the process. Another participant added an observation that more and more systems engineers are working full-time in leadership positions in health care systems. This creates in-house expertise for everyone across the organization to maximize cross-sector benefits.

REFERENCES

BOTA (British Orthopaedic Trainees' Association). 2018. *Hammer it out*. http://www.bota.org.uk/hammer-it-out (accessed June 26, 2018).

Smith, M. J., and P. C. Sainfort. 1989. A balance theory of job design for stress reduction. *International Journal of Industrial Ergonomics* 4(1):67–79.

Uganda Counseling and Support Services. 2018. *Bringing hope to Uganda—one village at a time*. http://www.ugandacss.org (accessed July 17, 2018).

4

Leadership in Organizational Resilience

ORGANIZATIONAL RESILIENCE

David Ballard, American Psychological Association

"Over the past day of the workshop," said Ballard from the Center for Organizational Excellence at the American Psychological Association (APA), "many topics came up related to organizational resilience." These include well-being, stress, meaningfulness of work, mindfulness, a climate that is supportive of employees, and self-care. The audience also heard about a variety of pathways to healthy, resilient organizations, he said, before asserting that there is "not a cookie cutter approach." Organizations must customize their methods and initiatives to meet their own unique organizational circumstances and employees. That said, a common thread that is or should be across all approaches is human centeredness and a focus on human behavior, he added. This is "psychology's area of expertise." The Center for Organizational Excellence "works to enhance the functioning of individuals, groups, organizations, and communities through the application of psychology to a wide range of workplace issues." The center, said Ballard, does this by creating healthy, resilient environments based on the knowledge and research from psychology. Often what they find, he said, is that implementation of evidence-based programs are necessary but not sufficient for change because underlying psychological factors are not addressed along with the program.

Ballard discussed the concept of resilience, and the importance of defining and measuring resilience in order to improve it. Resilience is a term that is used often but there is a "lack of conceptual clarity around it." A 2011

article found 104 different definitions of resilience in the literature (Sinclair and Britt, 2013). At times, resilience is described as a trait, other times, as a state of being, and still additional authors refer to resilience as a skill set that can be developed. Organizations looking to increase their resilience, said Ballard, need a way to measure resilience so they know if their initiatives are effective. The operational definition of resilience also matters as organizations work with employees not simply to "buffer themselves from the stressors" but to help people bounce back from the stressors they face. Ballard said there is no single answer to how to define resilience, and each organization must decide how to approach their employees within the context and goals of their unique situation.

One definition that is often used, said Ballard, is "demonstration of positive adaptation in the face of significant adversity" (Britt et al., 2013). However, this definition does not apply particularly well to organizational resilience, because most organizations do not face "significant adversity" on a regular basis, and thus changes to resilience cannot be measured. For most organizations, the discussion about resilience relates to day-to-day, low-level work stressors such as overload of responsibilities, lack of clarity around roles, inappropriate expectations, and interpersonal conflict. For these organizations, Ballard said, McEwen's definition of resilience is useful: "The capacity to manage the everyday stress of work while staying healthy, adapting and learning from setbacks and preparing for future challenges proactively" (McEwen, 2018).

APA surveys the U.S. workforce to measure attitudes, opinions, and work experience. Part of this survey looks at resilience using the Brief Resilience Scale, which asks people to rate themselves on six statements (Smith et al., 2008):

1. I tend to bounce back quickly after hard times.
2. It does not take me long to recover from a stressful event.
3. I usually come through difficult times with little trouble.
4. I have a hard time making it through stressful events.
5. It is hard for me to snap back when something bad happens.
6. I tend to take a long time to get over setbacks in my life.

APA's survey revealed that about 15–20 percent of workers have a difficult time getting back to normal after a stressful event. While this is a relatively small number, said Ballard, it can have a significant effect on an organization. A worker's lack of resilience is likely to affect not only his own performance but also the functioning and well-being of his colleagues and team.

In dealing with stress and mental health, many organizations put the emphasis on individual-level interventions, said Ballard. For example, or-

ganizations may provide stress management training, brown bag meetings, employee assistance programs, and other interventions designed to help individuals cope with stress. These programs are helpful, said Ballard, but without addressing systems-level issues, they can be a "colossal waste of resources." Systems-level interventions include initiatives such as aligning hiring and selection practices to the realities of the job, allowing autonomy and control in the workplace, and providing a predictable and healthy environment. When organizations take on the shared responsibility for employees' mental health by creating a supportive environment, they create a culture in which employees can thrive and do their best work.

In addition, said Ballard, a positive work environment makes employees feel they are being treated fairly by their employer, which has far-reaching implications. Ballard explained that when employees do not feel they are treated equitably, they are less motivated to do their best, are less satisfied with their job, experience greater chronic work stress, are more cynical and negative at work, and are more likely to want to leave their job. Clearly, these consequences affect not just the employee but the entire organization. Similar consequences are seen in employees who do not trust their employer or who do not feel valued by their employer.

Another factor that greatly affects the well-being of employees is support from senior leaders in the organization. "We hear all the time that senior leadership support is important," said Ballard, but "we have never seen data that actually demonstrate it, so we wanted to measure it" to see if it is true. To measure the importance of leadership, APA looked at the differences between employees who said their leaders supported the climate of well-being, compared to those who said their leaders were not supportive. On every measure, supported employees showed more resilience, well-being, and a likelihood to engage in wellness activities. For example:

- Eighty-six percent of supported employees feel valued, compared to 12 percent of nonsupported employees.
- Ninety-one percent of supported employees feel motivated at their jobs, compared to 38 percent of nonsupported employees.
- Fifty-five percent of supported employees regularly participate in health and wellness efforts, compared to 18 percent of nonsupported employees.
- Seventy-three percent of supported employees believe the organization helps employees develop a healthy lifestyle, compared to 11 percent of nonsupported employees (APA, 2016).

Ballard underscored the importance of these data showing that when senior leaders are supportive of building a positive and healthy work environment, outcomes are "better across the board."

APA has developed a psychologically healthy workplace model (see Figure 4-1). It is not about individual programs or policies, said Ballard, but about "the collection of activities" in which organizations engage. Health promotion and wellness efforts are part of a psychologically healthy workplace, but these efforts interact with and work in tandem with growth and development opportunities, work–life balance, the opportunities to be involved and recognized in the workplace, and good communication. Employee well-being and organizational functioning are affected by these factors that also affect each other, said Ballard. An employee who works at a better functioning, healthier organization is going to have a greater sense of well-being and a more stable mental state, and in turn, healthy employees contribute more to a well-functioning organization.

LEADERSHIP FOR HEALTH AND WELLNESS

Ballard's presentation emphasized the importance of supportive leadership for health and wellness in the workplace, employee well-being, organizational performance, and organizational resilience. His remarks opened the door for Elizabeth Goldblatt from the Academic Collaborative for Integrative Health, who oversaw the next session. In this session, Forum members and organizational leaders interviewed each other

FIGURE 4-1 Psychologically Healthy Workplace Model.
SOURCES: Presented by Ballard, April 19, 2018; APA, 2016. Reprinted with permission from APA.

about the varied ways in which they support their employees and how they themselves cope with the stress of working in what Goldblatt called today's "do more with less" model of care. The interviews uncovered insights from leaders as architects of an optimal system, as role models for wellness practice, as models of vulnerability, and as collaborators with other leaders.

Tracy Gaudet, Interviewed by John Weeks

Tracy Gaudet is currently the executive director of the Office of Patient-Centered Care and Cultural Transformation with the U.S. Department of Veterans Affairs (VA), but has long been engaged in the movement toward a focus on Whole Health. She spent 20 years working in integrative medicine at the University of Arizona and at Duke University. Gaudet responded to Weeks's opening of the interview by describing her work within the office she directs as caring for the entire person through a Whole Health lens. Whole Health, she explained, is about designing health care by asking: "If health care were truly about helping people to live their fullest life … what would it look like?" Gaudet said that designing health care in this way is "not just adding a little fluff around the corners," but about fundamentally changing how health care works. There is an enormous amount of enthusiasm and momentum for this transformation, she said, and it is "largely because the health care professionals and the employees want and need this." While disease care is still important, she acknowledged, this transformation is about rewiring the system so all aspects of health and well-being are at the center, rather than solely focusing on disease.

She noted that because the VA has always been a multifaceted agency for veterans—for example, providing resources for education and housing—the VA is particularly receptive to adopting this model. In addition, the structure of the VA allows for a great deal of learning about how to implement a Whole Health perspective. Gaudet said that because the VA can study outcomes, costs, and use within its system, it will be able to demonstrate the cost-utility of shifting to a Whole Health model for the private sector.

Leaders as Role Models

John Weeks, a planning committee member, asked Gaudet what she does to maintain her own health and well-being. Gaudet described the core of her self-care is to just "sit on a pillow and breathe." This practice of meditation allows her to let go of the daily stress, and to focus on breathing rather than chasing happiness, she said. Recently, Gaudet has been centering her meditation on one thought: "What if nothing is wrong?"

In addition to practices such as meditation that can help individuals cope with some types of stress, cultural change within the workplace has the potential of changing the well-being of an organization. Weeks asked Gaudet to discuss one specific action she has taken to change the work culture at the VA. Gaudet said advances in technology have created an expectation that people will be available 24 hours per day. She takes pains to lower this expectation within her team by telling them she does not want to see emails coming in after hours or in the middle of the night. She also tries to model this expectation. Gaudet noted that sometimes it is necessary for her to write emails on the weekend, but instead of sending them immediately, she saves them as drafts to be sent on Monday. Workshop participants shared more ideas for culture change, which appear in Chapter 5.

As a leader, said Gaudet, it is critically important that she model behaviors and practices that contribute to well-being for several reasons. First, employees are likely to see the work practices of leaders as expectations and strive to meet those expectations. To illustrate her point, Gaudet reiterated the example of leaders who are connected to email 24/7; they set a bar for employees who assume they too must always be ready to respond to their supervisor or colleagues at any hour of the day. Second, leaders can show that well-being is a journey, rather than an end. Gaudet said a "greater gift" to people is showing how to engage in self-care without dictating specific goals. Third, leaders should seek ways to "bake" well-being into the day-to-day practices of the organization. Exposing people to mindfulness and other wellness practices is helpful, said Gaudet, but they are unlikely to use them until they have personal firsthand experience. Gaudet said that she makes an effort to incorporate well-being practices into the workday. She offered personal suggestions from her workplace including starting every meeting with a moment of mindfulness, encouraging random acts of kindness, and having "gratefulness rounds." The fourth and final modeling of behavior, said Gaudet, is for leaders to help people reflect on their well-being and on practices that promote well-being. She added that when people reflect on how a practice affected their work, they "begin to see the benefits—the personal benefits and the professional benefits—and it begins to shift the culture."

Gaudet described shifting the culture of well-being at work as similar to rewiring the entire health care system. Instead of focusing on fixing what is wrong, the focus needs to be on proactively cultivating well-being and health. When people find a sense of purpose, and build their life and practices around working toward that purpose, "everything flips," she said before offering her final thought. Many people focus on innovating and developing new tools and programs, but innovation is not the only answer she cautioned, instead, "We need to do it, to model it, and to put our oomph behind it."

"If health care were truly about helping people to live their fullest life … what would it look like?"

—Tracey Gaudet

Jason Eliot, Interviewed by Kathrin Eliot

Kathrin Eliot, a forum member, interviewed Jason Eliot, who is the chief experience and talent officer at INTEGRIS Health, the largest provider of health care in Oklahoma. Within INTEGRIS Health, J. Eliot is responsible for human resources, clinical education, and community benefit initiatives, and he has sought to find ways of managing and reducing the stress experienced by both employees and leaders within their system. He described taking a "consumer experience" perspective in everything he does. This entails working to find a level of common experience for patients in the INTEGRIS system, which consists of 10 hospitals, 500 physicians, and 10,000 employees. The consumer experience perspective blends nicely with the human resource perspective, said J. Eliot, because creating a consistent culture of well-being across the system benefits patients, providers, and staff alike.

Consumer-Focused Systems Approach

J. Eliot described how he came to use a systems model to address well-being within INTEGRIS. The organization wanted to improve well-being, not just for physicians, but for all providers, clinicians, and staff, he said, because the patients' experience is affected by everyone they come in contact with. One of the challenges INTEGRIS faced involved different disciplines focusing on different aspects of practice. Each discipline had its own causes of stress and burnout leading to siloed solutions, rather than looking at how to design the entire system so it would function better. J. Eliot compared the process to the advent of the iPhone. Before the iPhone, said J. Eliot, companies worked in siloes so one company made the very best camera, one made the best calculator, and one made the best phone. Steve Jobs stepped in and said, "No, what you really want to be making is this." Pointing to his iPhone, J. Eliot continued by saying, this "is all of those in one." J. Eliot used this example with employees from across his organization to get them to see the value in designing an entire system that would support the patient at the center, rather than optimizing each individual piece.

Another challenge J. Eliot encountered was resistance from providers when he talked about the importance of the consumer experience in health care. "We are not serving hamburgers, we are saving lives," they

said to J. Eliot. To counter this attitude, J. Eliot compared a patient's experience in a hospital to a traveler's experience on a plane. On a plane, he said, travelers' lives are at risk. However, when they get off the plane, they do not thank the pilot for saving their lives. Rather, they compare and choose travel experiences based on the hospitality, food, and general experience. Similarly, patients are now choosing health care based on their overall experience in the health care setting, not on the skills and training and competency of the providers. This can be difficult for providers to understand, said J. Eliot.

Decompression

K. Eliot noted that J. Eliot focused a lot on other people's well-being in his work, and she asked him to reflect on how he takes care of himself and ensures that he does not get burned out. Like many leaders in the health professions, he responded by describing individual coping mechanisms. "I recently bought 12 acres of land," he said, so he can spend his days off "fixing fences and chain sawing the trees and feeding the goats." He admitted that some might not consider manual labor fun, but for him it "feeds [his] soul" and will "extend his work life" because it allows him to relax and recharge. J. Eliot remarked that well-being initiatives often focus on happiness at work, but that relaxation outside of work is equally important. His organization did a survey about employee resiliency, and asked questions about "activation" and "decompression." Activation questions centered around whether people were happy at work and were passionate about what they did. Decompression questions, on the other hand, looked at whether people could "check out" when they were done with work.

The survey showed that INTEGRIS employees scored high on activation, but that "decompression is where we failed as an organization." For example, even when employees were off the clock, they were receiving phone calls asking them to cover another shift. J. Eliot said that leaders need to model decompression that would encourage and enable their employees to follow their lead. Self-care—whether it is running, tending goats, or meditating—needs to be a primary focus for leaders. "A leader cannot expect, nor provide, a safe environment for their teams, unless they are at a place where they are at least aware of themselves and at least making steps toward" well-being, he concluded.

Angelo McClain, Interviewed by Sandra Crewe

Sandra Crewe, dean of the Howard University School of Social Work, interviewed Angelo McClain, a forum member and the CEO of the National Association of Social Workers (NASW). Previously, McClain served

for 6 years as the commissioner of the Massachusetts Department of Children and Families, working on issues of abuse and neglect of the state's most vulnerable children. Crewe interviewed McClain about the stressors of social work in today's culture, as well as the stressors of working within a system as a person of color. Crewe started by noting that social workers are exposed to stress through work with individuals, groups, organizations, and communities, and even sometimes from questions from family and acquaintances. Through this work, social workers bear the stress of others, experiencing "vicarious trauma, historical trauma, secondary traumatic stress, compassion fatigue, and burnout," said Crewe.

Systems Perspective

Crewe asked McClain for his thoughts on how to improve the health and well-being of the social services workforce, given the pressures and stressors they face. McClain responded that when he became commissioner in Massachusetts, there was a heavy focus on social worker safety—workers were being threatened and assaulted during the course of their work. However, it soon became clear that a broader approach was needed to improve the general wellness of social workers. By looking at wellness from a systems perspective, said McClain, there were obvious links between the wellness of social workers and the wellness of the families and children they served. He explained:

> In order for the children to be protected and nurtured, we need to take care of the families. In order for the families to do what they need to do, the social workers need to treat them right. In order for the workers to treat the families right, the supervisors need to treat them right.

McClain noted how this chain of effects goes all the way to the top levels of leadership. The way the commissioner is treated by the governor, he said, can trickle down and affect the well-being of everyone in the system.

Resilience and Vulnerability

Crewe asked the audience to suggest some definitions for resilience. Resilience, she said, is a term that is commonly used but not well-defined. Workshop participants offered definitions, including

- Honoring our past, being fully present in the moment, and being able to visualize the future

- The ability to not only bounce back from challenges, but to grow stronger from these challenges
- To bend, but not break, and bounce back

Crewe said that while resilience is often viewed as a positive attribute, there can be negative effects if health professionals and others "over-rely on resilience as an intervention, and assume that the person will bounce back." She said that, particularly in social work, there is a tendency to assume that people's professional training will enable them to endure any hardship or stress. When an employer relies on resilience, the employer misses an opportunity to help employees through difficult situations and prevent stress and burnout, said Crewe. In opening the conversation to others, J. Eliot underscored the importance of her last thought adding that it is important to not make resilience another burden on employees. People already are dealing with enough stress and overwork, he asserted. Another workshop participant, Simon Fleming, also shared his perspective in disliking the term *resilience*. "It implies that people should be able to cope with difficulty," he said, even in the face of the "ongoing relentless never-ending difficulty" of some health care workplaces.

Fleming's comment resonated with J. Eliot who thought that instead of focusing on resiliency, leaders could focus on restructuring the system so resiliency is only needed in extraordinary circumstances, rather than used as a day-to-day coping mechanism. Another participant, Darla Spence Coffey with the Council on Social Work Education, noted that studies about resilience often look for the extraordinary people who have survived horrific events and coped better than others. She said, "We should not need to be extraordinary to be good health care providers." Crewe concurred with this idea, and added that "for those who are resilient, there are always those who are not." Both resilient and nonresilient people are deserving of attention and care, she said.

McClain joined the discussion saying that he compares resilience to water rolling off a duck's back—the stresses and upsetting situations of social work "roll off" a resilient person and do not affect their functioning. People expect social workers to be "tough," said McClain, and the culture of social work sometimes reflects this attitude, with social workers insisting they are fine even after horrific events. McClain said that as commissioner, he made a point of telling social workers that "it is okay not to be" fine. He told participants about the time he was having a particularly difficult week, and he told his employees that he could "use a hug … or some really good thoughts or some prayers." He wanted to demonstrate that asking for help is not a moment of weakness, it is a moment of strength. McClain noted that in our society, people tend to believe that "if you ever have a moment of weakness, you are forever perceived as weak." McClain argued that

instead, a moment of weakness should be seen as simply that—a moment. "It was a moment. It doesn't define me," he said. McClain said it is his job to help his colleagues through their moments of weakness, and hopes they do the same for him.

"Asking for help is not a moment of weakness, it is a moment of strength."

—Angelo McClain

Racism and Sexism

"We are experiencing an upsurge in racism, sexism, and some of the other *isms*," said Crewe. She noted that many clients are the "targets of these isms," and asked McClain how this affects the stress in the profession. She also asked him to comment on how he is personally impacted by these issues as an African American social worker. McClain responded that while he cannot speak for every African American male, he personally felt a great deal of internalized inferiority. He told participants that when he was in seventh grade, he moved from a predominantly black community to a predominantly white community, and he found himself believing that his white classmates were better than he. Despite becoming salutatorian of his class, these feelings persisted, and it took personal cognitive work to prevent it carrying into his professional work. As a person of color, he feels an obligation "to do right by [his] community." At the same time, he does not want to use the "tools of the oppressor" to diminish other communities. Crewe added that as a black, female leader, she feels that she is less able to be herself and expose her vulnerabilities. She said that exposing vulnerabilities may deny her some opportunities because of differences in expectations about appropriate behavior for women of color.

Crewe asked McClain if there are specific tools that NASW offers its members to help them deal with these "daily struggles with the isms." He responded that it starts with the code of ethics, which contain a responsibility to self-care and a responsibility to practice competently. "If you are competent in what you are doing, you are going to get good results," said McClain, and "you are going to feel good about the work you are doing." In addition, the professional standards for social work address connections with other professionals, fair salaries, and issues of respect and feeling valued.

Flexibility in Work

Finally, Crewe and McClain discussed the issue of designing flexible and practical work practices to mitigate stress and promote well-being.

McClain said that his main goal is doing "things that make sense" for the employees within a given work context. For example, in Massachusetts, as commissioner he ensured that each staffer had access to a laptop. This allowed employees to work from home when the weather conditions were bad, and it permitted flexible teleworking for those who were approved. In his current position, staff are allowed to use a compressed workweek, in which employees work the same number of hours each pay period, but in 9 days instead of 10. McClain said that caring about staff is not necessarily about offering the same options to everyone, but about individualizing flexibility to fit people's unique needs.

REFERENCES

APA (American Psychological Association). 2016. *2016 work and well-being survey*. http://www.apaexcellence.org/assets/general/2016-work-and-wellbeing-survey-results.pdf (accessed July 6, 2018).

Britt, T. W., R. R. Sinclair, and A. C. McFadden. 2013. Introduction: The meaning and importance of military resilience. In *Building psychological resilience in military personnel: Theory and practice*. Washington, DC: American Psychological Association.

McEwen, K. 2018. *Resilience at work: A framework for coaching and interventions*. http://workingwithresilience.com.au/wp-content/uploads/2018/06/R@WWhitePaper-May-2018.pdf (accessed July 7, 2018).

Sinclair, R. R., and T. W. Britt. 2013. *Building psychological resilience in military personnel: Theory and practice*. Washington, DC: American Psychological Association.

Smith, B. W., J. Dalen, K. Wiggins, E. Tooley, P. Christopher, and J. Bernard. 2008. The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine* 15(3):194–200.

5

Building on the Lessons Learned

At several points during the workshop, participants gathered to discuss the presentations and to reflect on how to move forward in their own organizations with the ideas presented. This chapter summarizes these discussions, and includes a "to-do list" in which individual participants identified quick actions they could take to improve well-being in their own lives and for others at their organizations.

REFLECTIONS ON THE WORKSHOP

Siddharth Shah summarized what he heard at the workshop in four points. First, while helping individuals cope is worthy of time and attention, health professionals must put more focus on changing the system itself. He said, "The system itself seems to be getting off easy and deserves more heat." Second, he heard ambivalence about the term and concept of *resilience*, particularly when it devalues human experiences or "gets us off the hook through opportunities to support people." Third, there are several ways in which leaders can use their positions of power to facilitate change toward healthier systems. Leaders can lead by showing opposition to a negative status quo, having healthy but difficult conversations, being role models, demonstrating courage by displaying vulnerability, and pointing out policies that are being ignored. Fourth and finally, the discussions about race and equity demonstrated that "we are not in a postracial society, but instead our systems reinforce historical trauma unless we are deliberate about cultivating a more healing and equitable system."

Moving from Idea to Systems Change

Susan Scrimshaw, a forum member, reminded the audience of all the wonderful case studies and program examples they heard and discussed at the workshop, but she remarked on the absence of conversation on "the harder question of scaling-up." While it could be relatively easy to implement a small initiative or policy, she said, these types of changes are unlikely to significantly alter the culture at a large organization. Additionally, Scrimshaw continued, the forum members and workshop participants need to look at how to implement programs across entire systems that are sustainable over time.

Crewe agreed with Scrimshaw that a number of great ideas were presented but cautioned that such ideas should not be simply transplanted into another organization—"the promising practices for one organization may not work for another organization." The constituents, stakeholders, and needs of organizations may be very different, even if they share the same professional and general goals. In social work, she said, "We talk a lot about starting where the client is." This same philosophy applies to systematic change, "We have to get in touch with our particular organizations and the systems and then respond appropriately." J. Eliot concurred and said that even when two organizations seemingly have the same symptoms of stress and burnout, the root causes may be very different, and thus the solutions should be different. From a global perspective, said Talib, the definition of well-being may be very different between Kenya, Pakistan, and the United States, and initiatives and plans need to reflect these contextual differences.

The Costs of Change

"When you implement something to try to improve or make a difference," said Brenda Zierler, representing the American Academy of Nursing, "there is a de-implementation that is going on at the same time." She explained that when a new program is introduced to the workplace, workers will have to adjust and may even lose something. For example, adding a 1-minute moment of mindfulness at the beginning of every meeting means changing people's routines, and there is 1 less minute for other things like working, eating lunch, or socializing. Zierler further commented that such a de-implementation process needs to be considered when trying new programs, and one should not expect change to "happen quickly or easily." This notion came as a shock to Kenya McCrae who was surprised that not everyone would be open to or excited about change, even when the change is designed to make things better in the long term.

Change the System

Aviad Haramati briefly discussed the training system for health care providers, and how it may be contributing to stress, burnout, and lack of both mental and physical well-being. He said, "Medical students come to medical school better adjusted than their college-matched peers, but within 1 year, that changes and never comes back." Then referring back to the comments of Maryanna Klatt (see Chapter 3), radiology technicians, he said, suffer from back pain and shoulder pain—these problems start during training. Among students training in radiology, 36 percent have pain when they finish their training, and "they haven't even started working yet" (Lorusso et al., 2010). "Our training environment is making people sick," he determined. "We cannot simply ask people to be resilient or mindful, when the system itself is causing problems." Ballard agreed and added that we should not be training people to "withstand a terribly dysfunctional, negative, toxic work environment." Rather, there is a need to change the environment itself. He quoted Krishnamurti (1895–1986), the renowned Indian philosopher, who said, "It is no measure of health to be well-adjusted to a profoundly sick society" (Ballard, 2003). Haramati interjected that this perspective holds true for both societies and organizations. After agreeing, Ballard then added that individual-level interventions are unlikely to be effective unless there are policies in place to support well-being and well-being is prioritized at a systems level by the organization and the community.

"Our training environment is making people sick."

—Aviad Haramati

Involving Stakeholders

"It is usually the invisible staff in an organization that actually make the place function," said forum member Malcolm Cox. Many improvement initiatives focus efforts on the health providers, but there is a missed opportunity to involve and engage all of the people who make up an organization. In addition, leaders should be engaging the community members who are served by the health care organizations. Unfortunately, he said, aside from board members, "it is not a common practice" to solicit input and engagement from the people who make up the communities served. Ballard noted that stakeholders sometimes have differing perspectives and goals, and there may need to be trade-offs, but the ultimate goal should be "to get the best outcome possible for everyone."

Learning from Other Sectors

Ruth Nemire, representing the American Association of Colleges of Pharmacy, commented on the similarities between the work environment of the current health care system and the work environment of a disaster relief team. For example, both environments involve stressful situations, time pressure, and the emotional burden of caring for others. However, she said, in disaster relief people are "always taking care of each other." They look out for the needs of their colleagues, and there is usually a psychologist available to assist when called on. She wondered aloud why "we don't do that for anybody in the hospitals or any of the workplaces" in health care.

Kreitzer brought up an intriguing project from Google known as Project Aristotle (Google, n.d.). The activity aimed to better understand what makes a perfect team knowing the enormous power of groups to innovate, to quickly identify errors, and to achieve better results with greater job satisfaction. After years of research involving statisticians, organizational psychologists, sociologists, engineers, and others, they found that what mattered most was kindness. The teams where people were kind to each other and expressed empathy were the most successful collaborations within Google. She then brought the example back to health care. "I share this with you because when I talk to organizations large and small and they're facing sometimes great challenges like 'How do we acquire the budget to make these sweeping organizational changes that need to happen?'" She responded by saying, "There are strategies like cultivating gratitude and cultivating kindness that can have huge impacts."

NEXT STEPS

The forum members briefly discussed how the forum itself could incorporate and act on the issues raised and lessons learned. Ideas included

- Integrate issues of well-being into other workshops topics (Coffey).
- Encourage cooperation between health care organizations and health care educators to better position students entering the workplace to learn from positive role models in resilient, adaptable organizations (Jeffries).
- Work with key stakeholders to develop common standards and a clear operational definition of wellness and resiliency (Mancini).
- Explore the creation of interprofessional guidelines that include self-care, resilience, health, and well-being, and encourage the educational programs and their accrediting bodies to include these areas in their guidelines (Goldblatt).

Workshop participants listed and discussed ways they could carry the lessons learned at the workshop to improve their own personal well-being as well as the well-being of their colleagues and organizations. These lessons include

- Implement a personal or organizational policy of no emails on weekends or after 5:00 pm. Put emails in a draft folder if you need to work outside regular work hours, but do not send them until morning (Gaudet).
- Once per day, walk over or call someone instead of emailing them (Skolchelak).
- Have compassion for people who think differently (Klatt).
- Do not borrow tomorrow's problems by checking email late at night (Walker).
- Put a sign outside your door that says "Come back in 5 minutes, I'm breathing" (Haramati).
- Plant flowers on campus or the grounds of the workplace to spread cheer (Scrimshaw).
- Send notes to colleagues and their partners to thank them for their hard work and dedication (Jeffries).
- Check in with somebody every day to see how they are doing (Crewe).
- Take space for yourself to breathe, and communicate to colleagues that it is okay for them to take space to breathe (Nyirenda).
- Use the term work–life integration instead of trying to *balance* work and life that are really two separate efforts (Haramati).
- Find ways that your whole self can be present in both work and leisure time (Leary).
- Focus on facilitating joy and empowerment rather than removing the negatives of work (Merrick).
- Practice gratitude and kindness, both in your personal and professional lives (Kreitzer).

REFERENCES

Ballard, D. W. 2003. Forest for the trees. *gradPSYCH Magazine*, September 2003.

Google. n.d. *Guide: Understand team effectiveness*. https://rework.withgoogle.com/guides/understanding-team-effectiveness (accessed July 7, 2018).

Lorusso, A., L. Vimercati, and N. L'Abbate. 2010. Musculoskeletal complaints among Italian X-ray technology students: A cross-sectional questionnaire survey. *BMC Research Notes* 3(1):114.

Appendix A

Workshop Agenda

A Systems Approach to Alleviating Work-Induced Stress and Improving Health, Well-Being, and Resilience of Health Professionals Within and Beyond Education: A Workshop

April 26–27, 2018

Keck Center of the National Academies, Room 100
500 Fifth Street, NW, Washington, DC 20001

DAY 1: APRIL 26, 2018

WORKSHOP OBJECTIVE: To explore how a design thinking, systems approach could be used for tailoring interventions that address the unique needs of each care and health professions educational organization by drawing on the assets of the organization and the individuals that make up their community.

9:00am **Welcome**
Caswell Evans, Innovation in Health Professional Education Global Forum
Co-Chair

SESSION I: SETTING THE STAGE

Objective:
To lay a foundation for understanding the scope of stress and burnout in the health professions and how the workshop will build a pathway toward organizational resilience, work unit collaboration, and individual well-being.

9:05am **Orientation to the workshop**
Zohray Talib, Workshop Co-Chair

9:15am **Design thinking with a systems approach as a pathway to health**
Mary Jo Kreitzer, Director, Center for Spirituality & Healing, University of Minnesota

9:35am **Questions**
3-minute pause for body/mind connections—Elizabeth Goldblatt

9:45am **Applying design and systems thinking concepts**
Facilitator: Mary Jo Kreitzer, Workshop Co-Chair
Case studies
- Design Thinking as a Tool for Interdisciplinary Education in Health Care: Tim van de Grift, Vrije Universiteit University Medical Center Amsterdam
- Systems Approach: Pinar Keskinocak, Georgia Institute of Technology

10:15am **Discussion**

10:45am **BREAK**

SESSION II: DESIGN/SYSTEMS THINKING FOR CHANGING CULTURE

11:15am **Changing culture**
Moderator: Ted Mashima, Association of American Veterinary Medical Colleges

Example 1: Interprofessional compassionate care
Dorrie Fontaine, University of Virginia School of Nursing

Example 2: Mind Matters Initiative for promoting well-being
Lizzie Lockett, Royal College of Veterinary Surgeons, United Kingdom

Interactive panel discussion: Each table comes up with a question for one or both speakers

12:15pm **LUNCH**

2:15pm **BREAK**

2:45pm **Breakout sessions report back**
Facilitator: Sandeep Kishore, Icahn School of Medicine at Mount Sinai

3:15pm **Leadership: From personal health to organizational resilience**
Moderator: Elizabeth Goldblatt, Academic Collaborative for Integrative Health
Interactive interviews
1. John Weeks, *Journal of Alternative and Complementary Medicine*, interviews Tracy Gaudet, U.S. Department of Veterans Affairs' Office of Patient-Centered Care and Cultural Transformation
2. Kathrin Eliot, Academy of Nutrition and Dietetics, interviews Jason Eliot, Chief Experience and Talent Officer at INTEGRIS Health, Oklahoma
3. Sandra Crewe, Howard University School of Social Work, interviews Angelo McClain, National Association of Social Workers

Facilitator: Kimberlyn Leary, Harvard T.H. Chan School of Public Health

Panel discussion

4:30pm **Guided reflection**
Guide: Aviad Haramati, Center for Innovation and Leadership in Education (CENTILE)

Discuss ideas with those around you, then share comments with all participants

4:45/5:00pm **ADJOURN**

DAY 2: APRIL 27, 2018

A continental breakfast will be available starting at 7:30am

7:30am **Breakfast**

SESSION III: RESILIENT ORGANIZATIONS

8:00am **Welcome**
Deborah Powell, Innovation in Health Professional Education Global Forum
Co-Chair

8:05am **Recap of Day 1**
Siddharth Ashvin Shah, Greenleaf Integrative

Policy to practice: Evidence-based process for building organizational resilience
Moderator: Kennita Carter, Health Resources and Services Administration

8:15am **Work hours limits**
Eric Holmboe, ACGME, talks with Rajata Rajatanavin, former Minister of Public Health in Thailand and former President of Mahidol University

3-minute pause for body/mind connections—Maryanna Klatt

8:45am **How to set up and assess evidence-based organizational happiness**
Charamporn Holumyong and Sirinan Kittisuksathit, Institute for Population and Social Research, Mahidol University, Thailand

Interactive discussion

9:45am **BREAK**

SESSION IV: A PATHWAY FORWARD

10:00am **Resilient organizations**
Moderator: Catherine Grus, American Psychological Association
Speaker: David Ballard, Center for Organizational Excellence, American Psychological Association

Table discussion: To develop your design pathway toward organizational resilience, share your ideas with others at your table about who makes up the stakeholder base in and outside of your organization.

10:30/ 10:45am **Designing a pathway to health and well-being**
Facilitator: Workshop Co-Chairs

Each table comes up with a path that is interprofessional and refers back to ideas discussed in session 2

Share ideas

11:00am **ADJOURN**

Appendix B

The Importance of Well-Being in the Health Care Workforce

Taking care of the mental health of providers directly affects their ability to fully serve their patients. In addition, provider burnout affects other members of the health care workforce—"physician and staff dissatisfaction feed on each other" (Bodenheimer and Sinsky, 2014). This interrelationship between provider well-being and patient care led Bodenheimer and Sinsky to propose that the Triple Aim (improve population health, enhance patient experience, and reduce costs) be expanded to include a Fourth Aim of "improving the work life of health care clinicians and staff."

Having control over one's time may improve the health professional's stress level (Benson et al., 2016; Campo et al., 2009; Hale et al., 2006; Long et al., 2013), but nurses and doctors in particular are under intense pressure to spend less time with patients and more time performing administrative duties despite the toll it is taking on them (Shanafelt and Noseworthy, 2016; VITAL WorkLife, 2015). Much of this shift from care to administrative tasks is driven by profitability goals. However, a business case can also be made for a mentally stable health workforce. This is especially true for health professional education. Students are influenced by what they see in the clinical environment which, at times, has been described as toxic (Braithwaite et al., 2017). A toxic organizational culture can accelerate burnout in all levels of workers, but can be countered through effective policies leading to a resilient organization.

SOURCES OF STRESS AND DISSATISFACTION

The sources of stress and dissatisfaction among the health care workforce are myriad and interrelated. These sources include financial pressures

that affect staffing and workload, and the pressure to provide quality patient care despite the increased workload (Cimiotti et al., 2012; Hall et al., 2016). Such intensified pressure affects all workers across the spectrum of care. Physicians are stressed about issues such as inadequate time with patients, electronic health records, administrative requirements, and high turnover rate of other health professions and support staff (VITAL WorkLife, 2015). There are external factors that place undue burdens on health care executives; these burdens in turn affect the way doctors and nurses are forced to practice (Shanafelt and Noseworthy, 2016).

While much has been reported in the literature on the very real challenges faced by physicians and nurses, burnout is no less prevalent in other health professions. For example, veterinarians may have reached a tipping point within their profession. Long work hours, excessive workloads, euthanasia, and ethical dilemmas leading to compassion fatigue are some of the job-related stressors they face (Hansez et al., 2008; Lovell and Lee, 2013). Studies involving mental health workers found similarly high levels of burnout (Morse et al., 2012). Psychiatrists at times feel stigmatized and threatened by violent patients, while social workers can feel undervalued in their work that is emotionally draining, ethically stressful, and limited in decision-making power (Evans et al., 2006; O'Donnell et al., 2008; Rossler, 2012). Like social workers, registered dietitian nutritionists also deal with feeling undermined in the workplace and frustrated by inadequate reimbursement options (Devine et al., 2004). Reimbursement for services is a struggle faced by integrative medicine and many health professionals working in areas of prevention and wellness in the United States (Marvasti and Stafford, 2012; Ross, 2009). Other professions such as physician assistants; optometry; physical therapy; occupational therapy; and speech, language, and hearing vary somewhat with regard to stress and stressors based on where the health professional is working and how much autonomy or control one experiences in doing their work (Benson et al., 2016; Campo et al., 2009; Hale et al., 2006; Long et al., 2013).

Students are not immune from these pressures; there is reason to believe that high stress levels exist in all health professions students, and that these stresses intensify during the clinical years of training (Coffey et al., 2017; Dutta et al., 2005; Gomathi et al., 2013; Robins et al., 2015). In fact, stress leading to burnout has been observed in osteopathic medicine students, while psychology students report that factors such as poor work–life balance and debt load contribute to high levels of stress (Grus et al., 2017; Piccinini et al., 2017). Unhealthy eating as a response to stress, while a potential concern across health professions, has been noted as a particular concern for dietetics students (Eliot and Kolasa, 2017). Facets of the training environment such as educators who are not effectively managing their

own high levels of stress can contribute to trainee dissatisfaction with their educational experiences (Zeman and Harvison, 2017).

FINANCIAL COST OF BURNOUT

In addition to the personal and professional toll of these stresses, there are also financial costs resulting from medical errors caused by burnout (Hall et al., 2016; Shanafelt et al., 2010). Dewa et al. (2014) estimated that burnout is costing Canada $213.1 million because of reduced clinical hours and early retirement. Holdren and colleagues (2015) noted that replacing a registered nurse can cost as much as $67,000 per nurse.

Ensuring the well-being of the health care workforce is essential for the workers themselves, but it can also affect patients by improving safety and satisfaction, and raising quality at lower costs (Dobler et al., 2017; Hall et al., 2016; Shanafelt et al., 2017). The question is how to ensure the well-being of the entire health care workforce. There have been numerous mental health initiatives proposed and implemented at health care organizations and educational institutions. These include mindfulness training, hiring scribes to reduce administrative workload, and offering rewards like prepared meals and housecleaning for work outside of one's clinical requirements (*The Washington Post*, 2015). While some of these initiatives have shown promise within the conditions they were implemented in, there is no evidence that such a program will have the same level of success in another location or workforce population. For an initiative to be adopted and successful, it must be based on the needs, desires, and unique situation of the stakeholders who will be affected. Using a strategic, collaborative process to identify problems and develop solutions helps ensure that responses to work stress are relevant, effective, and sustainable. A systems approach to design thinking is one way of creating individualized solutions for individuals, work units, or organizations. By continuously testing and adapting the interventions to the unique situation, a strategic approach to building the well-being of workers and the resilience of organizations can be developed.

PROMOTING WELL-BEING AND RESILIENCE

There are a number of well-being initiatives that have been pursued in recent years, designed to address the widespread issue of burnout and professional dissatisfaction among health professionals. These initiatives have been implemented by both academic institutions and health care organizations, and have been designed to improve the well-being of individual students and health professionals as well as to improve organizational resilience.

Academic Initiatives

Dental and pharmaceutical schools have been looking into certain personality traits that may predispose some students to burnout, such as anxiety disorders and poor communication skills (Higuchi et al., 2016; Rada and Johnson-Leong, 2004). Whether health professional schools should consider these types of traits when making admissions decisions is a topic for debate (Jardine et al., 2017). However, one might argue that it is the system of training itself that causes stress among students rather than inborn personality traits. A study of depression, anxiety, and stress in undergraduate dental students found high levels of each in their sample (56 percent, 67 percent, and 55 percent, respectively) (Basudan et al., 2017). This can be contrasted with a dental school that focuses on teamwork and peer-to-peer involvement for establishing a strong social support network. At this school, more than 80 percent of the 335 dental student respondents reported feeling happy for all, most, or a large portion of the time (Harrison et al., 2016).

Similarly positive results were found at medical schools that altered their course structures to offer courses to help alleviate student stress (Pereira and Barbosa, 2013; Pereira et al., 2015; Thomas et al., 2011). One change—moving to a pass/fail grading system—has been particularly effective at not only decreasing stress but also improving group cohesion. The Saint Louis University School of Medicine used a changed grading system as their starting place for more organizational reforms (Slavin et al., 2014). They reduced the curriculum content, instituted longitudinal electives, and set up learning communities composed of students and faculty. This intervention was remarkably inexpensive and easy to implement; according to the authors, the program's annual budget was less than $10,000 and required no additional staff.

Mindfulness Training

There are many examples of strategies aimed at mind–body skills. The Center for Mind–Body Medicine at Georgetown University has been training medical school faculty for more than two decades (Gordon, 2014). Through a 5-day training (and advanced training) program, faculty are taught how to apply a meditative process in small group settings and become more aware of their thoughts and feelings. The trained faculty then return to their institutions and apply what they learned, including creating safe spaces for medical students to share personal experiences. Gordon noted evidence showing that students who understand and can cope with their own emotions have higher levels of self-care.

Klatt and colleagues (2015) studied a modified mindfulness intervention in a work situation to determine whether there are benefits to offering

a 1-hour, facilitated mindful awareness session in a chaotic intensive care unit environment. With a 97 percent retention rate over the course of the 8-week offering, and increased resiliency and engagement in work compared with controls, the researchers concluded that it is possible to implement a successful mindfulness program in high-stress environments, which could include academic health centers and schools.

A third example involves the use of technology for offering a mindfulness-based stress reduction program to nurses at a large health care facility. Following 8 weeks of mostly online group sessions, researchers found positive effects on nurses' health and well-being that were sustained, particularly in those nurses who continued their mind–body practices (Bazarko et al., 2013). The low cost and potential ease of reaching a wide audience makes online interventions a feasible alternative for those who cannot attend mind–body classes in person.

Social Cohesion Wellness Programs

Some student/trainee wellness programs emphasize social cohesion as a key element. Wellness for medical residents was promoted at the Mayo Clinic through a team-based, 12-week, incentivized exercise program that showed improved quality of life and less burnout in physician trainees who participated in the program (Weight et al., 2013). The Vanderbilt Medical Student Wellness Program is an ongoing example of a social cohesion initiative. It has multiple facets that include pairing students with faculty for mentoring, arranging mandatory wellness retreats, and joining students together through committees (Drolet and Rodgers, 2010). In their implementation guide, the faculty advisor states that, "Without support from the institution any attempt at the development of a wellness initiative is doomed to failure" (Zackoff et al., 2012).

The University of Virginia (UVA) School of Nursing's Compassionate Care Initiative is another example of organizational support for wellness that involves social cohesion (Bauer-Wu and Fontaine, 2015). Their initiative began with an interprofessional contemplative retreat for clinicians in New Mexico that blossomed into what is now a multipronged approach involving students, faculty, clinicians, and staff across the UVA campus. Along with resilience and mindfulness as their central tenets, the coordinators also viewed interprofessional collaboration and a healthy work environment as vital to their mission and wove them into all of their programs and priorities.

Another wellness program—out of the North Carolina State University College of Veterinary Medicine—sought to offer students a fun, interactive program that tapped into their creativity (Royal et al., 2016). The architects of the program came up with a learning community system

that split interested students and faculty into four "houses." Throughout the semester, house members engaged in healthy competitions within five targeted areas—intellectual, mental and emotional, physical health, social, and cultural—as a way of building relationships and creating a sense of community within the college.

Health Care Institutional Initiatives

While robust wellness programs may exist within educational institutions, unless the practice environment is conducive to applying learned skills, the likelihood is they will have minimal effect in clinical settings. Individual tools like journaling, personal reflections, and mindfulness training can ease some of the day-to-day pain of working in stressful situations, but for these aids to be truly effective, the organization must create a culture whereby every worker feels safe and supported by leadership and colleagues. For all the health professions, it means zero tolerance for bullying or violence (Estryn-Behar et al., 2008; Leisy and Ahmad, 2016; Portoghese et al., 2017; Smith et al., 2016). It also involves coming up with a strategy to deal with perceived tensions between quality and economics that can at times play out as conflicts between clinical and managerial staff (Price et al., 2007; Storkholm et al., 2017). In hope of easing some of the tension, Bodenheimer and Sinsky (2014) proposed the Quadruple Aim that would place equal weight on the well-being of the caretaker as it would with the three other aspects of the Triple Aim (West, 2016); however, it is hard to see how this will be achieved in the short term given the intense focus of all industries to do more with less. In health care, this is resulting in greater administrative and care responsibilities, with lower human and financial resources to improve individual care and the health of populations (Shanafelt and Noseworthy, 2016).

Coping Strategies

Despite the challenges, groups are putting forth strategies to try and cope with the "do more with less" mentality that is pervasive around the world. In doing so, it may be possible to decrease costs while improving staff satisfaction. Collins et al. (2014) reported that by reassigning experienced advanced care nurse practitioners to the Vanderbilt University Medical Center Division of Trauma step-down unit, patient length of stay decreased, saving almost $9 million in hospital charges. Similar savings are possible for facilities that achieve magnet status by decreasing turnover rates for nurses (a decrease of 15 percent can result in $1.38 million in savings) and improving their overall job satisfaction (Westendorf, 2007).

People of color are underrepresented in many of the health professions and in areas ranging from health care management, to education, to

practice. Being underrepresented is in itself a challenge, but there are other difficulties including biases, disparities in compensation, and differences in expectations including reports of uncompensated volunteerism (Dreachslin et al., 2002; Hammond et al., 2017; Moceri, 2012; Price et al., 2005). One example is that while more minority and female professors are being hired at an increased rate, they are not becoming tenured professors (Finkelstein et al., 2016). The Northeast Consortium is a minority faculty development effort to expose faculty trainees to research and teaching to improve their prospects of advancement (Butts et al., 2008). Similarly, the Teen Medical Academy is an attempt to improve the pipeline for underrepresented ethnic minorities from financially disadvantaged backgrounds, to enter higher medical education (Oscos-Sanchez et al., 2008). Recruiting and retaining a more diverse health care workforce and faculty may be an effective way for ethnic minorities to cope with the unique challenges they face within the health professions (Keshet and Popper-Giveon, 2016). For many organizations, this would require not only changing institutional policies but the overall culture as well (Pololi and Jones, 2010).

Systems-Wide Approaches

Some in leadership positions have also tried systems-wide approaches to improve the health and well-being of those in their organization. Kawanishi (2016) described setting up support for students and faculty to help cope with mental health challenges at a medical school and university hospital in Japan. They began by increasing staff within their mental health management system. At the same time, policies were revised (i.e., rules and regulations around health management, and a new employee support system), a screening tool implemented, counseling opportunities expanded, collaborative meetings with staff and faculty set up, and a mental health awareness campaign was started. This resulted in significantly greater use of mental health services. Similar to Kawanishi's initiative, Hamric and Epstein (2017) tested a system-wide intervention that was aimed at addressing moral distress among their providers—a critical issue at their institution. The intervention involved setting up a moral distress consultation service for relevant parties to discuss the identified ethical or moral issue in a safe space. Often, the problem started as a specific patient incident but through reflective discussions, it became clear that the issue went beyond the single case to involve work units or the entire organization.

Organizational Culture of Collaboration

In evaluating their program, Hamric and Epstein (2017) found that after the consultations, staff felt like they had been heard, resulting in their

sense of empowerment, engagement, and collaboration as they addressed challenges and the potential for change at multiple organizational levels. The collaborative aspect of their findings is particularly remarkable when combined with results reported from Johnson et al. (2010) who studied academic primary care teams. These researchers found those with more collaborative teams also showed greater joy in the work they were doing; conversely, persons working on less collaborative teams felt less professional satisfaction and more awareness of the failing systems they were working under. These findings were supported by Körner et al. (2015) who found that interprofessional teamwork was the mediating factor between organizational culture and job satisfaction.

One way that work units have facilitated collaboration, while promoting compassionate care and team support, is through Schwartz Center Rounds. These are opportunities for health care staff to come together on a regular basis to share and discuss personal thoughts and feelings on emotional aspects of patient care in a safe space. Having been implemented in more than 375 organizations in the United States and Canada and now England, these rounds have the potential for changing culture as trust is built within work units and potentially spread to the entire organization (Deppoliti et al., 2015; Robert et al., 2017).

Burnout Prevention

Many programs within medicine have been designed in an effort to diminish the rate of burnout among physicians. One such pilot out of Stanford University's Department of Emergency Medicine rewarded doctors for work they did outside of their standard clinical requirements. For each extra activity the surgeon performed—like mentoring or assisting colleagues with their shifts—the surgeon received credit toward personal services like prepared meals and housecleaning (*The Washington Post*, 2015). Another attempt to diminish burnout is to hire medical scribes to decrease the administrative duties of physicians (Wachter and Goldsmith, 2018). The hiring of scribes has shown promise for improving clinician satisfaction as well as patient relations (Brady and Shariff, 2013; Shultz and Holmstrom, 2015).

Sleep disturbances are commonly cited complaints of interns, residents, and people working the night shift, leading to burnout. To combat sleep-related fatigue, some have suggested strategic napping as a way to improve alertness and well-being among hospital shift workers (McDonald et al., 2013; Shnayder et al., 2017).

Wellness programs are possibly the most common interventions put forth by educational and care organizations to combat burnout. One resiliency program trained facilitators from multiple health professions to

address high rates of compassion fatigue and burnout in a Midwestern hospital (Potter et al., 2015). In addition to improved staff morale and fewer medical errors among hospital employees, the program also aided the facilitators themselves by improving their lives emotionally, personally, and professionally. Similarly positive results were found through a university mentoring and shared governance program designed to improve the workplace culture for nurses. The program not only moved the organization toward a more supportive culture, but mentors also reported improved teamwork and an ability to cope with conflict.

ORGANIZATIONAL RESILIENCE

Improving individual well-being and resilience through supportive programs, positive environments, and adaptable systems are all part of the building blocks of organizational resilience that includes reasonable workloads and consensus building. Through design and systems thinking, each leader can create a pathway to resilience that has the greatest likelihood of success at his or her organization. Many of the interventions described previously are structured to help alleviate the stress of individuals in specific professions or situations, but hold the potential for being adapted to more systems-wide approaches moving toward organization-wide resilience. The key is to constantly evaluate the program and assess its effect on the entire group of stakeholders—before, during, and after its implementation—to maximize the benefit and minimize any unintended consequences.

Pathway to Worker Well-Being and Organizational Resilience

Resilient organizations are better equipped to manage adversity during times of crisis (Nguyen et al., 2016). This means having adaptable systems in place that can handle variable workflows, fluctuating finances, and external policy changes as government and other regulatory bodies update their requirements and mandates. Flexible human resources are another element of organizational resilience. While many view worker resilience as an individual trait, Nguyen et al. (2016) argued that employee resilience is much broader than that, encompassing organization-driven learning opportunities and relationship-building events that improve the overall function of the organization. Leadership is a key element to how well employees engage in such activities, and thus the resiliency of the organizational workforce is dependent upon its leadership. As such, staff and leaders maximize their ability to cope when they work under supportive organizational systems and policies, feel safe to express themselves, and have access to resources that enable each employee to thrive. This is different than individual resilience that involves personal characteristics of coping and adaptability.

Moving an organization toward resiliency can improve worker morale and support leadership while also meeting the fiscal requirements for running a thriving business in today's "do more with less" mentality mentioned previously in the paper. How one goes about accomplishing organizational resilience in a financially sensible manner depends on the particular situation of the organization. Each work unit and facility has unique assets and challenges. Using a design thinking, systems approach helps to tailor interventions to the needs of the population, and the capabilities and constraints of the staff working within the organization. It is through open communication and listening to voices at all levels of an organization that systems are established and initiatives are developed in the most relevant, effective, and sustainable manner possible. This is what leads to resiliency of organizations, its workers, and its leaders by establishing a purpose and meaning to one's work and creating a sense of well-being for everyone at educational, care, and health-promoting organizations.

REFERENCES

Basudan, S., N. Binanzan, and A. Alhassan. 2017. Depression, anxiety and stress in dental students. *International Journal of Medical Education* 8:179–186.

Bauer-Wu, S., and D. Fontaine. 2015. Prioritizing clinician wellbeing: The University of Virginia's compassionate care initiative. *Global Advances in Health and Medicine* 4(5):16–22.

Bazarko, D., R. A. Cate, F. Azocar, and M. J. Kreitzer. 2013. The impact of an innovative mindfulness-based stress reduction program on the health and well-being of nurses employed in a corporate setting. *Journal of Workplace Behavioral Health* 28(2):107–133.

Benson, M. A., T. Peterson, L. Salazar, W. Morris, R. Hall, B. Howlett, and P. Phelps. 2016. Burnout in rural physician assistants: An initial study. *Journal of Physician Assistant Education* 27(2):81–83.

Bodenheimer, T., and C. Sinsky. 2014. From Triple to Quadruple aim: Care of the patient requires care of the provider. *Annals of Family Medicine* 12(6):573–576.

Brady, K., and A. Shariff. 2013. Virtual medical scribes: Making electronic medical records work for you. *Journal of Medical Practice and Management* 29(2):133–136.

Braithwaite, J., J. Herkes, K. Ludlow, L. Testa, and G. Lamprell. 2017. Association between organisational and workplace cultures, and patient outcomes: Systematic review. *BMJ Open* 7(11):e017708.

Butts, G. C., J. Johnson, A. H. Strelnick, M. L. Soto-Greene, B. Williams, and E. Lee-Rey. 2008. Diversity in academic medicine no. 4 northeast consortium: Innovation in minority faculty development. *Mount Sinai Journal of Medicine* 75(6):517–522.

Campo, M. A., S. Weiser, and K. L. Koenig. 2009. Job strain in physical therapists. *Physical Therapy* 89(9):946–956.

Cimiotti, J. P., L. H. Aiken, D. M. Sloane, and E. S. Wu. 2012. Nurse staffing, burnout, and health care-associated infection. *American Journal of Infection Control* 40(6):486–490.

Coffey, D. S., K. Eliot, E. Goldblatt, C. L. Grus, S. Kishore, M. E. Mancini, R. Valachovic, and P. Hinton Walker. 2017. *A multifaceted systems approach to addressing stress within health professions education and beyond*. Washington, DC: National Academy of Medicine.

Collins, N., R. Miller, A. Kapu, R. Martin, M. Morton, M. Forrester, S. Atkinson, B. Evans, and L. Wilkinson. 2014. Outcomes of adding acute care nurse practitioners to a level I trauma service with the goal of decreased length of stay and improved physician and nursing satisfaction. *The Journal of Trauma Acute Care Surgery* 76(2):353–357.

Deppoliti, D. I., D. Cote-Arsenault, G. Myers, J. Barry, C. Randolph, and B. Tanner. 2015. Evaluating Schwartz center rounds in an urban hospital center. *Journal of Health Organization Management* 29(7):973–987.

Devine, C. M., M. Jastran, and C. A. Bisogni. 2004. On the front line: Practice satisfactions and challenges experienced by dietetics and nutrition professionals working in community settings in New York state. *Journal of the American Dietetic Association* 104(5):787–792.

Dewa, C. S., P. Jacobs, N. X. Thanh, and D. Loong. 2014. An estimate of the cost of burnout on early retirement and reduction in clinical hours of practicing physicians in Canada. *BMC Health Services Research* 14(1):254.

Dobler, C. C., C. P. West, and V. M. Montori. 2017. Can shared decision making improve physician well-being and reduce burnout? *Cureus* 9(8):e1615.

Dreachslin, J. L., E. Sprainer, and G. Jimpson. 2002. Communication: Bridging the racial and ethnic divide in health care management. *Health Care Manager* 20(4):10–18.

Drolet, B. C., and S. Rodgers. 2010. A comprehensive medical student wellness program—design and implementation at Vanderbilt School of Medicine. *Academic Medicine* 85(1):103–110.

Dutta, A. P., M. A. Pyles, and P. A. Miederhoff. 2005. Stress in health professions students: Myth or reality? A review of the existing literature. *Journal of the National Black Nurses Association* 16(1):63–68.

Eliot, K., and K. M. Kolasa. 2017. *Stress-induced eating behaviors of health professionals*. Washington, DC: National Academy of Medicine.

Estryn-Behar, M., B. van der Heijden, D. Camerino, C. Fry, O. Le Nezet, P. M. Conway, H.-M. Hasselhorn, and NEXT Study Group. 2008. Violence risks in nursing—results from the European "next" study. *Occupational Medicine* 58(2):107–114.

Evans, S., P. Huxley, C. Gately, M. Webber, A. Mears, S. Pajak, J. Medina, T. Kendall, and C. Katona. 2006. Mental health, burnout and job satisfaction among mental health social workers in England and Wales. *British Journal of Psychiatry* 188(1):75–80.

Finkelstein, M. J., V. Martin Conley, and J. H. Schuster. 2016. *Taking the measure of faculty diversity.* New York, NY: TIAA Institute.

Gomathi, K. G., S. Ahmed, and J. Sreedharan. 2013. Causes of stress and coping strategies adopted by undergraduate health professions students in a university in the United Arab Emirates. *Sultan Qaboos University Medical Journal* 13(3):437–441.

Gordon, J. S. 2014. Mind-body skills groups for medical students: Reducing stress, enhancing commitment, and promoting patient-centered care. *BMC Medical Education* 14(1):198.

Grus, C. L., K. E. Bodner, J. Kallaugher, S. H. Lease, R. A. Schwartz-Mette, D. Shen-Miller, and N. Kaslow. 2017. *Promoting well-being in psychology graduate students at the individual and systems levels.* Washington, DC: National Academy of Medicine.

Hale, S. T., G. D. Kellum, and C. Burger. 2006. Burnout in speech-language pathologists employed in schools. Paper presented at American Speech-Language-Hearing Association 2006 convention, Miami, FL.

Hall, L. H., J. Johnson, I. Watt, A. Tsipa, and D. B. O'Connor. 2016. Healthcare staff wellbeing, burnout, and patient safety: A systematic review. *PLOS ONE* 11(7):e0159015.

Hammond, J., S. Marshall-Lucette, N. Davies, F. Ross, and R. Harris. 2017. Spotlight on equality of employment opportunities: A qualitative study of job seeking experiences of graduating nurses and physiotherapists from black and minority ethnic backgrounds. *International Journal Nursing Studies* 74:172–180.

Hamric, A. B., and E. G. Epstein. 2017. A health system-wide moral distress consultation service: Development and evaluation. *HEC Forum* 29(2):127–143.

Hansez, I., F. Schins, and F. Rollin. 2008. Occupational stress, work-home interference and burnout among Belgian veterinary practitioners. *Irish Veterinary Journal* 61(4):233–241.

Harrison, P. L., L. M. Shaddox, C. W. Garvan, and L. S. Behar-Horenstein. 2016. Wellness among dental students: An institutional study. *Journal of Dental Education* 80(9):1119–1125.

Higuchi, Y., M. Inagaki, T. Koyama, Y. Kitamura, T. Sendo, M. Fujimori, Y. Uchitomi, and N. Yamada. 2016. A cross-sectional study of psychological distress, burnout, and the associated risk factors in hospital pharmacists in Japan. *BMC Public Health* 16:534.

Holdren, P., D. Paul III, and A. Coustasse. 2015. Burnout syndrome in hospital nurses. Paper read at Business and Health Administration Association International, Chicago, IL.

Jardine, D. L., J. M. McKenzie, and T. J. Wilkinson. 2017. Predicting medical students who will have difficulty during their clinical training. *BMC Medical Education* 17:43.

Johnson, J. K., D. M. Woods, D. P. Stevens, J. L. Bowen, L. P. Provost, C. S. Sixta, and E. H. Wagner. 2010. Joy and challenges in improving chronic illness care: Capturing daily experiences of academic primary care teams. *Journal of General Internal Medicine* 25(Suppl 4):581–585.

Kawanishi, C. 2016. Designing and operating a comprehensive mental health management system to support faculty at a university that contains a medical school and university hospital. *Seishin Shinkeigaku Zasshi* 118(1):28–33.

Keshet, Y., and A. Popper-Giveon. 2016. Work experiences of ethnic minority nurses: A qualitative study. *Israel Journal of Health Policy Research* 5:18.

Klatt, M., B. Steinberg, and A. M. Duchemin. 2015. Mindfulness in Motion (MIM): An onsite mindfulness based intervention (MBI) for chronically high stress work environments to increase resiliency and work engagement. *Journal of Visualized Experiments* (101):e52359.

Körner, M., M. A. Wirtz, J. Bengel, and A. S. Göritz. 2015. Relationship of organizational culture, teamwork and job satisfaction in interprofessional teams. *BMC Health Services Research* 15(1):243.

Leisy, H. B., and M. Ahmad. 2016. Altering workplace attitudes for resident education (A.W.A.R.E.): Discovering solutions for medical resident bullying through literature review. *BMC Medical Education* 16:127.

Long, J., R. Burgess-Limerick, and F. Stapleton. 2013. What do clinical optometrists like about their job? *Clinical and Experimental Optometry* 96(5):460–466.

Lovell, B. L., and R. T. Lee. 2013. Burnout and health promotion in veterinary medicine. *Canadian Veterinary Journal* 54(8):790–791.

Marvasti, F. F., and R. S. Stafford. 2012. From "sick care" to health care: Reengineering prevention into the U.S. system. *The New England Journal of Medicine* 367(10):889–891.

McDonald, J., D. Potyk, D. Fischer, B. Parmenter, T. Lillis, L. Tompkins, A. Bowen, D. Grant, A. Lamp, and G. Belenky. 2013. Napping on the night shift: A study of sleep, performance, and learning in physicians-in-training. *Journal of Graduate Medical Education* 5(4):634–638.

Moceri, J. T. 2012. Bias in the nursing workplace: Implications for Latino(a) nurses. *Journal of Cultural Diversity* 19(3):94–101.

Morse, G., M. P. Salyers, A. L. Rollins, M. Monroe-DeVita, and C. Pfahler. 2012. Burnout in mental health services: A review of the problem and its remediation. *Administration and Policy in Mental Health* 39(5):341–352.

Nguyen, Q., J. R. C. Kuntz, K. Naswall, and S. Malinen. 2016. Employee resilience and leadership styles: The moderating role of proactive personality and optimism. *New Zealand Journal of Psychology* 45(2):13–21.

O'Donnell, P., A. Farrar, K. BrintzenhofeSzoc, A. P. Conrad, M. Danis, C. Grady, C. Taylor, and C. M. Ulrich. 2008. Predictors of ethical stress, moral action and job satisfaction in health care social workers. *Social Work in Health Care* 46(3):29–51.

Oscos-Sanchez, M. A., L. D. Oscos-Flores, and S. K. Burge. 2008. The teen medical academy: Using academic enhancement and instructional enrichment to address ethnic disparities in the American healthcare workforce. *Journal of Adolescent Health* 42(3):284–293.

Pereira, M. A. D., and M. A. Barbosa. 2013. Teaching strategies for coping with stress—the perceptions of medical students. *BMC Medical Education* 13:50.

Pereira, M. A. D., M. A. Barbosa, J. C. de Rezende, and R. F. Damiano. 2015. Medical student stress: An elective course as a possibility of help. *BMC Research Notes* 8:430.

Piccinini, R. G. G., K. D. McRae, J. W. Becher, A. Z. Hayden, C. B. Hentges, A. Kalcec, P. Kinkhabwala, V. W. Halvorsen, A. White-Faines, and D. Escobar. 2017. *Addressing burnout, depression, and suicidal ideation in the osteopathic profession: An approach that spans the physician life cycle*. Washington, DC: National Academy of Medicine.

Pololi, L. H., and S. J. Jones. 2010. Women faculty: An analysis of their experiences in academic medicine and their coping strategies. *Gender Medicine* 7(5):438–450.

Portoghese, I., M. Galletta, M. P. Leiter, P. Cocco, E. D'Aloja, and M. Campagna. 2017. Fear of future violence at work and job burnout: A diary study on the role of psychological violence and job control. *Burnout Research* 7:36–46.

Potter, P., S. Pion, and J. E. Gentry. 2015. Compassion fatigue resiliency training: The experience of facilitators. *Journal of Continuing Education in Nursing* 46(2):83–88.

Price, E. G., A. Gozu, D. E. Kern, N. R. Powe, G. S. Wand, S. Golden, and L. A. Cooper. 2005. The role of cultural diversity climate in recruitment, promotion, and retention of faculty in academic medicine. *Journal of General Internal Medicine* 20(7):565–571.

Price, M., L. Fitzgerald, and L. Kinsman. 2007. Quality improvement: The divergent views of managers and clinicians. *Journal of Nursing Management* 15(1):43–50.

Rada, R. E., and C. Johnson-Leong. 2004. Stress, burnout, anxiety and depression among dentists. *Journal of the American Dental Association* 135(6):788–794.

Robert, G., J. Philippou, M. Leamy, E. Reynolds, S. Ross, L. Bennett, C. Taylor, C. Shuldham, and J. Maben. 2017. Exploring the adoption of Schwartz center rounds as an organisational innovation to improve staff well-being in England, 2009–2015. *BMJ Open* 7(1):1–10.

Robins, T. G., R. M. Roberts, and A. Sarris. 2015. Burnout and engagement in health profession students: The relationships between study demands, study resources and personal resources. *Australasian Journal of Organisational Psychology* 8:e1.

Ross, C. L. 2009. Integral healthcare: The benefits and challenges of integrating complementary and alternative medicine with a conventional healthcare practice. *Integrative Medicine Insights* 4:13–20.

Rossler, W. 2012. Stress, burnout, and job dissatisfaction in mental health workers. *European Archives of Psychiatry and Clinical Neuroscience* 262 Suppl 2:S65–S69.

Royal, K., K. Flammer, L. Borst, J. Huckle, H. Barter, and J. Neel. 2016. A comprehensive wellness program for veterinary medical education: Design and implementation at North Carolina State University. *International Journal of Higher Education* 6(1):74–83.

Shanafelt, T. D., and J. H. Noseworthy. 2016. Executive leadership and physician well-being. *Mayo Clinic Proceedings* 92(1):129–146.

Shanafelt, T. D., C. M. Balch, G. Bechamps, T. Russell, L. Dyrbye, D. Satele, P. Collicott, P. J. Novotny, J. Sloan, and J. Freischlag. 2010. Burnout and medical errors among American surgeons. *Annals of Surgery* 251(6):995–1000.

Shanafelt, T., J. Goh, and C. Sinsky. 2017. The business case for investing in physician well-being. *The Journal of the American Medical Association Internal Medicine* 177(12):1826–1832.

Shnayder, M. M., J. E. St Onge, and A. J. Caban-Martinez. 2017. New common program requirements for the resident physician workforce and the omission of strategic napping: A missed opportunity. *American Journal of Industrial Medicine* 60(9):762–765.

Shultz, C., and H. Holmstrom. 2015. The use of medical scribes in health care settings: A systematic review and future directions. *Journal of the American Board of Family Medicine* 28(3):371–381.

Slavin, S. J., D. L. Schindler, and J. T. Chibnall. 2014. Medical student mental health 3.0: Improving student wellness through curricular changes. *Academic Medicine* 89(4):573–577.

Smith, C. R., G. L. Gillespie, K. C. Brown, and P. L. Grubb. 2016. Seeing students squirm: Nursing students' experiences of bullying behaviors during clinical rotations. *Journal of Nursing Education* 55(9):505–513.

Storkholm, M. H., P. Mazzocato, M. Savage, and C. Savage. 2017. Money's (not) on my mind: A qualitative study of how staff and managers understand health care's Triple Aim. *BMC Health Services Research* 17:98.

The Washington Post. 2015. *Time in the bank: A Stanford plan to save doctors from burnout*. https://www.washingtonpost.com/news/inspired-life/wp/2015/08/20/the-innovative-stanford-program-thats-saving-emergency-room-doctors-from-burnout/?utm_term=.c1a4695e1eff (accessed September 12, 2018).

Thomas, S. E., M. K. Haney, C. M. Pelic, D. Shaw, and J. G. Wong. 2011. Developing a program to promote stress resilience and self-care in first-year medical students. *Canadian Medical Education Journal* 2(1):e32–e36.

VITAL WorkLife and Cejka Search. 2015. *2015 VITAL WorkLife & Cejka Search physician stress and burnout report*. Minneapolis, MN: VITAL WorkLife.

Wachter, R., and J. Goldsmith. 2018. To combat physician burnout and improve care, fix the electronic health record. *Harvard Business Review*, March 30, 2018.

Weight, C. J., J. L. Sellon, C. R. Lessard-Anderson, T. D. Shanafelt, K. D. Olsen, and E. R. Laskowski. 2013. Physical activity, quality of life, and burnout among physician trainees: The effect of a team-based, incentivized exercise program. *Mayo Clinic Proceedings* 88(12):1435–1442.

West, C. P. 2016. Physician well-being: Expanding the Triple Aim. *Journal of General Internal Medicine* 31(5):458–459.

Westendorf, J. 2007. Magnet recognition program. *Plastic Surgical Nursing* 27(2):102–104.

Zackoff, M., E. Sastre, and S. Rodgers. 2012. Vanderbilt wellness program: Model and implementation guide. *MedEd Portal: The Journal of Teaching and Learning Resources* 1–55.

Zeman, E. A., and N. Harvison. 2017. *Burnout, stress, and compassion fatigue in occupational therapy practice and education: A call for mindful, self-care protocols*. Washington, DC: National Academy of Medicine.

Appendix C

Listening to Leadership

Prior to setting the workshop agenda, members of the planning committee embarked on a listening tour to hear from more than 40 key stakeholders within the health and education sectors. Members aimed to better understand how leaders view the systems they and their constituencies work within, and the role culture plays in perpetuating or mitigating stressful work or learning environments. The goal was to gain a better understanding of stress, worker well-being, and organizational resilience from a systems perspective across the education to practice continuum. This paper describes some of the opinions expressed by individuals in leadership positions during these informal conversations.

CREATING A POSITIVE CULTURE

Leaders cannot be passive. They must actively engage with their employees, faculty, or students to stay out in front of any potential pitfalls or conflicts that could erode the trust between leadership and others. Strong leaders avoid top-down governance and aspire to a flattened hierarchy. By ensuring adequate time for reflection and collaboration, they encourage a bottom-up approach that is more dynamic and responsive to change. The bottom-up approach must be equitable and fair, using a reward structure that offers everyone an equal opportunity for success and recognition. This also means sharing leadership by allowing the person with the greatest expertise in an area to take the lead on that issue. Shared leadership can present challenges that could be mitigated by setting up a clear understanding of who is responsible for specific aspects of a program that is maintained

through a nonhierarchical structure. It is up to the leader to hire people who embrace their vision of a collaborative, supportive atmosphere. All of these behaviors, if done in an open and transparent fashion, model what a good leader looks like. It creates an equitable, open, and safe environment for the entire team to work in and care for their patients and their colleagues.

There is a strong push to do more at lower costs, which is restructuring traditional relationships between people as competition for increasingly limited resources intensifies. Faculty and staff must feel appreciated and valued, health professionals must find meaning in their work, and it is up to the leaders to provide the setting in which each employee, faculty member, or student can perform at his or her maximum capacity. How a leader accomplishes this while remaining fiscally responsible is a source of great stress and burnout for those in leadership positions.

ORGANIZATIONAL RISKS

Many great initiatives and interventions to provide leaders with new tools to reward or engage employees come with cautions. For example, linking data to bonuses or other incentives leaves the organization open to individual corruption through manipulation of the data to obtain the bonus without the results. There is also the question of sustainability. Many organizations with positive cultures rely heavily on an individual champion to create a positive organizational climate. When that person leaves, the safe, trusting environment can gradually erode along with individuals' emotional wellness. This underscores why role modeling is so important—these behaviors should truly lead to a culture change, rather than placing the fate of the organization in the hands of one, albeit competent, person.

ROLE OF LEADERS

Some believe a good leader functions as the buffer between societal, regulatory, and fiscal pressures of the external world and the internal work environment, thereby creating a positive experience for their employees or students. The challenge for such leaders is in maintaining their own health and well-being. Often, leaders who repeatedly sacrifice their own mental and physical health to protect their workers or students from external stresses get increasingly tired, angry, and more punitive—it is human nature. To counteract this risk, leaders can create a leadership environment in which others are also empowered to lead thereby shifting the role of senior leadership to one that shares the effort of creating resilience. Training health professional students on the value of shared leadership may be one way of preparing the next generation of leaders. In this way, the health

professions would work together toward preventing a stress-induced negative workplace rather than attempting to manage the aftereffects of stress, which often is burnout.

Appendix D

Speaker Biographical Sketches

David Ballard, Psy.D., M.B.A., M.A., currently serves as assistant executive director for organizational excellence at the American Psychological Association (APA), where he is responsible for providing leadership, direction, evaluation, and management for all activities related to APA's Center for Organizational Excellence. Dr. Ballard has provided research, consultation, and training services to government agencies, corporations, medical schools, and universities in the areas of workplace health and productivity, public health, prevention, and health care finance. He has experience in management, marketing, and consumer research. Dr. Ballard received his doctorate in Clinical Psychology and his M.B.A. in Health and Medical Services Administration from Widener University, where he completed concentrations in organizational and forensic psychology.

Kennita Carter, M.D., is a Senior Advisor in the Division of Medicine and Dentistry, Bureau of Health Workforce at the Health Resources and Services Administration, U.S. Department of Health and Human Services. She received a Bachelors of Science in Psychobiology from the University of California, Los Angeles, and completed both medical school and a residency in Internal Medicine at the University of Maryland School of Medicine. She is a fellowship-trained geriatrician, and completed her fellowship at Union Memorial Hospital in Baltimore. She completed the Duke Integrative Leadership fellowship in Durham, North Carolina, and was a recipient of the Bravewell Leadership Fellowship in Integrative Medicine at the University of Arizona. She continues to serve as volunteer faculty, training geriatric medicine fellows, internal medicine residents, and medical

students in an interprofessional setting at the U.S. Department of Veterans Affairs. Other areas of interest include health equity, spirituality in medicine, and physician well-being.

Sandra E. Crewe, Ph.D., M.S.W., holds a B.S.W. and a M.S.W. from the National Catholic School of Social Services, Catholic University of America. She earned her Ph.D. in Social Work from Howard University in Washington, DC. She is a member of the Academy of Certified Social Workers. Her research interests include family caregiving and kinship care (emphasis on older adults), program development and evaluation, and cultural competence. She serves as the director of the Multidisciplinary Center for Social Gerontology. She is a Master Faculty Scholar for the Washington, DC, Area Geriatric Education Center Consortium and member of the National Association of Social Workers Aging Specialty Group, and served as a member of the expert panel for Family Caregiving Standards. Dr. Crewe also serves on the Council on Social Work Education's professional development committee. She is a program evaluation/development consultant for the Department of Social Development (provincial government), Cape Town, South Africa.

Sara J. Czaja, Ph.D., is an Assistant Professor of Gerontology in Medicine at Weill Cornell Medicine. Formerly, Dr. Czaja was a Professor in the Departments of Psychiatry and Behavioral Sciences, and Industrial Engineering at the University of Miami and Scientific Director of the Center on Aging at the University of Miami. She has an extensive background in scientific investigation related to functional performance of older adults, innovative use of technology in intervention research, supervision of both laboratory and field research, and administration of large-scale research programs. She is also the Director of the Center on Research and Education for Aging and Technology Enhancement (CREATE). CREATE is funded by the National Institute on Aging and involves collaboration with the Georgia Institute of Technology and Florida State University. Dr. Czaja has extensive experience in aging research and a long commitment to developing strategies to improve the quality of life for older adults. Her research interests include aging and cognition, caregiving, human–computer interaction, training, and functional assessment.

Jason Eliot, J.D., SPHR, is the Chief Experience and Talent Officer for INTEGRIS Health, Inc., the largest provider of health care in the state of Oklahoma. In his role, Mr. Eliot has strategic and operational responsibilities for all human resources, clinical education, and community benefit initiatives. Mr. Eliot was also tasked with the creation of the INTEGRIS Experience Team whose purpose is to enhance each consumer's experience

with INTEGRIS. Mr. Eliot leads the Workforce team for the INTEGRIS Baldrige journey, led the Workforce Alignment team for the INTEGRIS transformation efforts, is a member of the INTEGRIS Strategy Council, and is active in numerous IT task forces, including the Epic Implementation Steering Committee. INTEGRIS has been named a "Best Place to Work in Oklahoma" multiple times and has received numerous other recognitions for the care it provides its patients and programs it has to support its employees. It is the only health care provider in the nation that runs a charter elementary school, the Stanley Hupfeld Academy at Western Village, for which Mr. Eliot serves on the board and is an active supporter of community health improvement efforts in all of the communities INTEGRIS has hospitals.

Katie Eliot, Ph.D., R.D., is an Assistant Professor and the Director of the undergraduate program in Nutrition and Dietetics at Saint Louis University, where she serves as a primary faculty member at the Center for Interprofessional Education and Research. For the past 6 years, Dr. Eliot has participated in a variety of unique interprofessional education experiences including an international medical mission trip and the development of an interprofessional practicum capstone course. She currently serves on the Interprofessional Education Teaching, Learning and Assessment Team; the Interprofessional Grand Rounds Team; and teaches in the Applied Decision Making in Interprofessional Practice course. Dr. Eliot has presented nationally on interprofessional education topics ranging from course development to student learning assessment. She believes that preparing students to work in interprofessional teams is a means to promote better patient outcomes. As an advocate for her profession, Dr. Eliot is highly involved in dietetics leadership at the local, state, and national level. She currently serves as the chair of the inter-professional education task force for the Nutrition and Dietetics Educators and Preceptors Council.

Caswell Evans, D.D.S., M.P.H., is the Associate Dean for Prevention and Public Health Sciences at the University of Illinois, Chicago (UIC) College of Dentistry; he is also a faculty member in the UIC School of Public Health. Previously he served as the Executive Editor and Project Director for *Oral Health in America: A Report of the U.S. Surgeon General*. For 12 years, Dr. Evans was Director of Public Health Programs and Services for the Los Angeles County Department of Health Services. He is a member of the National Academy of Medicine. He is a past president of the American Public Health Association, the American Association of Public Health Dentistry, and the American Board of Dental Public Health. Dr. Evans is Chairman of DentaQuest Foundation Board. He also serves on the Chicago Board of Health and the boards of the Institute of Medicine of Chicago, Oral Health America, and the Children's Dental Health Project.

Simon Fleming, MBBS, MRCS, M.Sc., FRSA, MAcadMEd, MASE(RACS), MFSTEd, AFHEA, is a Trauma and Orthopaedic registrar on the Pott rotation in London. He is also Immediate Past President of the British Orthopaedic Trainees' Association, the Chief Resident for the International Conference in Residency Education for a second term, the Vice Chair of the Academy Trainee Doctors' Group, and a Ph.D. candidate in Medical Education at Barts and The London Medical School. While passionate about orthopedics and improving surgical training, he has special interests in hand surgery, competency attainment, and combating bullying, undermining and harassment in surgery through the award-winning #HammerItOut campaign, on which he has delivered a TEDx talk. He is heavily involved in mentoring and teaching both undergraduates and postgraduates, and has been recognized with a Surgeon Educator Award from the Royal College of Surgeons (Eng) and the Academic Support Award from Queen Mary University and Barts and The London Medical School.

Dorrie Fontaine, Ph.D., R.N., FAAN, is the Dean of Nursing at the University of Virginia. Dr. Fontaine has implemented appreciative inquiry methodology as the basis for the school's strategic planning and launched an interdisciplinary process to create a transformational model to provide compassionate end-of-life care across the health care spectrum. In addition, she has been a strong advocate for interprofessional education, engaging both medical and nursing students in collaboration with the School of Medicine, and a champion of developing the school's continuing education programs for working nurses. Dr. Fontaine received her bachelor of science degree in nursing from Villanova University, a master's degree from the University of Maryland, and her Ph.D. from the Catholic University of America in Washington, DC. In 2006, she completed a Management and Leadership in Education Program at the Harvard Graduate Institute of Higher Education.

Tracy Gaudet, M.D., is the Executive Director of the Veterans Health Administration's (VHA's) National Office of Patient Centered Care and Cultural Transformation. This office is charged with leading VHA's transformation to Whole Health, an approach to health care that empowers and equips people to take charge of their health and live their lives to the fullest. Dr. Gaudet came to the U.S. Department of Veterans Affairs from the Duke University Health System, where she served as Executive Director of Duke Integrative Medicine from 2001 to 2010. Under her leadership, Duke Integrative Medicine created a state-of-the-art health care facility dedicated to the transformation of medicine through the exploration, demonstration, and research of new models of patient-centered care. Dr. Gaudet received her B.A. degree in Psychology and Sociology from Duke University, her

M.D. degree from Duke University, and she completed her residency in Obstetrics and Gynecology at The University of Texas in San Antonio. She is Board Certified in Obstetrics and Gynecology, and regularly teaches and writes for the American College of Obstetrics and Gynecology.

Elizabeth Goldblatt, Ph.D., M.P.A., M.H.A., is the chair of the Academic Consortium for Complementary and Alternative Health Care. Dr. Goldblatt is a leading educator in the acupuncture and Oriental medicine profession. Dr. Goldblatt has been a strong advocate for interdisciplinary, collaborative, and academic efforts. She assisted in creating three National Institutes of Health National Center for Complementary and Integrative Health centers with Oregon Health & Science University (OHSU) and Kaiser Permanente that included representation from the complementary and alternative health care colleges. She helped OHSU and the other complementary health care educational institutions create the Oregon Collaborative for Integrative Medicine. Dr. Goldblatt also had the lead in creating two of the eight clinical doctoral programs in Acupuncture and Oriental Medicine at the Oregon College of Oriental Medicine and American College of Traditional Chinese Medicine (ACTCM). Dr. Goldblatt is currently working with the University of California, San Francisco, Osher Center, and California Pacific Medical Center in acupuncture internship placements, cross-education projects, exploring collaborative research, and placing medical doctors from both institutions on ACTCM's faculty. Dr. Goldblatt has a Master's in Public Administration/Health Administration from Portland State University. She earned her Ph.D. from University of California, Los Angeles in Ethnomusicology, which combined anthropology and ritual arts. Her emphasis was on Tibetan culture.

Catherine Grus, Ph.D., is the Deputy Executive Director for Education at the American Psychological Association (APA) and has been on the staff of the APA since 2005. Dr. Grus received her Ph.D. in clinical psychology from Nova University in 1993. She completed her doctoral internship at the University of Miami School of Medicine and a 2-year postdoctoral fellowship at the University of North Carolina at Chapel Hill. At the APA she works to advance policies and practices that promote high-quality education and training at the doctoral, postdoctoral, and post-licensure levels. Areas of focus for Dr. Grus include expanding the number of accredited internships and positions, and development of models and tools for competency assessment in professional psychology, supervision, and interprofessional education. Prior to coming to APA, Dr. Grus was an assistant professor in the Department of Pediatrics at the University of Miami School of Medicine, where she served as the director of an APA-accredited internship program.

Aviad (Adi) Haramati, Ph.D., is Professor of Physiology, Department of Biochemistry, Molecular & Cellular Biology and Medicine (Nephrology) at Georgetown University School of Medicine. A graduate of Brooklyn College, he received a Ph.D. in Physiology (University of Cincinnati) and came to Georgetown in 1985 after spending 5 years at Mayo Clinic. For more than 25 years, Dr. Haramati's research focus was on regulation of kidney and electrolyte physiology. For the past decade, his activities have centered on medical education and rethinking how health professionals are trained. In April 2013, he was named the inaugural director of the Center for Innovation and Leadership in Education at the Georgetown University Medical Center. Dr. Haramati has a deep interest in improving medical education across the globe, especially with regard to the intersection of science, mind–body medicine, and professionalism. He has been a Visiting Professor at more than 60 medical schools around the world and currently works with a number of medical school deans and educators in Europe, Israel, and North America.

Eric Holmboe, M.D., a board-certified internist, is Senior Vice President, Milestones Development and Evaluation of the Accreditation Council for Graduate Medical Education (ACGME). Prior to joining ACGME in January 2014, he served as the chief medical officer and senior vice president of the American Board of Internal Medicine (ABIM) and the ABIM Foundation. He is also professor adjunct of medicine at Yale University, and adjunct professor at the Uniformed Services University of the Health Sciences. Dr. Holmboe retired from the U.S. Naval Reserves in 2005. His research interests include interventions to improve quality of care and methods in the evaluation of clinical competence. His professional memberships include the American College of Physicians, where he is a Master; Society of General Internal Medicine; Association of Medical Education in Europe; and he is an honorary Fellow of the Royal College of Physicians in London. Dr. Holmboe is a graduate of Franklin and Marshall College and the University of Rochester School of Medicine. He completed his residency and chief residency at Yale-New Haven Hospital, and was a Robert Wood Johnson Clinical Scholar at Yale University.

Charamporn "Joy" Holumyong, Ph.D., is an Assistant Professor of the Institute for Population and Social Research, Mahidol University, Thailand. She obtained her doctorate in economics from the University of Utah. She worked as a faculty and researcher in the United States for many years, including the University of Nevada, Las Vegas; University of Utah; and Salt Lake Community College. Her publication and research interests included labor economics, population economics, migration and health issues in the Greater Mekong subregion, and quality of life and happiness of Association of Southeast Asian Nations workers.

Ronald Kaluya, M.Ed., Ph.D., has committed his life to improving the quality of life of people in remote areas in Uganda holistically (spiritually, emotionally, and physically). In 2008, he responded to God's call on his life to minister spiritually, emotionally, and physically to the people of Uganda. Dr. Kaluya earned his Masters of Education in counseling and Human Development specializing in Mental Health Counseling, and a Master of Arts in Christian Leadership from the Lindsey Wilson College. Dr. Kaluya earned his doctorate in Ministry with an emphasis on Global Health and Wholeness from Saint Paul School of Theology. In 2011, he started Uganda Counseling and Support Services, which is now a registered nonprofit in the United States and in Uganda that provides spiritual, emotional, and physical support to disadvantaged people in eastern Uganda.

Pinar Keskinocak, Ph.D., is the William W. George Chair and Professor in the Stewart School of Industrial Engineering, and co-founder and co-director of the Center for Health and Humanitarian Systems. She also serves as the College of Engineering ADVANCE Professor.

Previously, she worked at IBM T.J. Watson Research Center. She received her Ph.D. in Operations Research from Carnegie Mellon University, and her M.S. and B.S. in Industrial Engineering from Bilkent University. Dr. Keskinocak's research focuses on the applications of operations research and management science with societal impact, particularly health and humanitarian applications, supply chain management, and logistics/transportation. She currently serves as a department editor for *Operations Research* (Policy Modeling and Public Sector area), associate editor for *Manufacturing & Service Operations Management*, and secretary of INFORMS.

Sandeep "Sunny" Kishore, M.D., Ph.D., M.Sc., is a Fellow at Yale University. He was formerly a post-doctoral fellow at Harvard Medical School where he directed the Young Professionals Chronic Disease Network, which currently includes 4,000 members from more than 150 countries committed to the equitable prevention and treatment of noncommunicable diseases as a social justice issue. He has successfully petitioned or co-petitioned the addition of nine medicines to the World Health Organization Essential Medicines List, including blockbuster cholesterol-lowering statin drugs in 2007. He has served as delegate to the United Nations General Assembly, a Fellow at the Massachusetts Institute of Technology Dalai Lama Center for Ethics & Transformative Values, is the first *Lancet* awardee for community service, a Paul & Daisy Soros Fellow, and a TEDMED 2012 speaker. His work has appeared widely, including in *JAMA*, *The Lancet*, *Health Affairs*, and the *Nature Reviews* series. His Ph.D. research focused on the evolution of malaria parasitism in humans, earning him the Raymond W. Sarber award by the American Society of Microbiology for most outstanding Ph.D.

student in microbiology. He completed his M.D. at Cornell's medical college and his medical internship at Yale.

Sirinan Kittisuksathit, Ph.D., is an Associate Professor and the Deputy Director for Social Enterprise Development at the Institute for Population and Social Research (IPSR), Mahidol University. She holds a Ph.D. in Geography from the University of Dundee, Scotland, United Kingdom. Her research focuses on quality of life and happiness, migration, and adolescent reproductive health. She specializes in conducting research and development, and monitoring and evaluation research. She currently studies social well-being, happiness, and healthy workplaces and is the Director of the Thailand Centre for Happy Worker Studies of IPSR, Mahidol University.

Maryanna Klatt, Ph.D., is a Professor in the College of Medicine at The Ohio State University, Department of Family Medicine. Dr. Klatt's research focus has been to develop and evaluate feasible, cost-effective ways to reduce the risk of stress-related chronic illness for employees of high-stress work environments. Specifically her research has shown that nurses working in a surgical intensive care unit reduced their stress by 40 percent (shown in their salivary amylase), and that university/hospital faculty and staff slept significantly better after her 8-week, 1-hour/week intervention, Mindfulness in Motion. This program effectively combines mindfulness meditation, yoga, and relaxing music, and it is delivered at the worksite. Dr. Klatt's latest research shows a 22 percent reduction in burnout for health care professionals, with a significant increase in their resilience. Her goal is to reduce health care cost via preventative stress reduction worksite programming. She has shown that mindful awareness interventions produce an average of $4,300 annual cost savings for participants up to 5 years post-intervention. Dr. Klatt has published several articles and book chapters, and has presented her work at national and international scientific conferences.

Mary Jo Kreitzer, Ph.D., R.N., FAAN, is the founder and director of the Center for Spirituality & Healing at the University of Minnesota, where she also serves as a tenured professor in the School of Nursing. Within the School of Nursing, Dr. Kreitzer is the co-lead of the doctorate of nursing practice program in integrative health and healing. She has served as the principal investigator or co-principal investigator of numerous clinical trials focusing on mindfulness meditation with persons with chronic disease including studies focusing on solid organ transplant, cardiovascular disease, chronic insomnia, diabetes, and caregivers of people with Alzheimer's disease. Dr. Kreitzer regularly presents to practitioner and public audiences as well as at academic and health care conferences. Dr. Kreitzer earned her

doctoral degree in public health focused on health services research, policy, and administration, and her master's and bachelor's degrees in nursing.

Kimberlyn Leary, Ph.D., M.P.A., is an associate professor of psychology at the Harvard Medical School and an associate professor in the Department of Health Policy and Management at the Harvard T.H. Chan School of Public Health, where she directs the Enabling Change program. Dr. Leary is also the Executive Director of Policy Outreach at McLean Hospital and a faculty affiliate at the Program on Negotiation at Harvard Law School. Currently, she is also a Senior Advisor to the CEO at the National Math and Science Initiative, serving as a thought partner on strategy pertaining to inclusive STEM education. From 2016 to 2018, Dr. Leary has been a research fellow at the Women and Public Policy Program at the Harvard Kennedy School and with the New America Foundation's International Security Program. Her research and scholarly work is centered on leadership, negotiation capacity, and large-scale systemic change. She has a Ph.D. in clinical psychology from the University of Michigan, an M.P.A. from the Harvard Kennedy School, and an A.B. from Amherst College, where she is also on the Board of Trustees.

Lizzie Lockett joined the Royal College of Veterinary Surgeons in February 2005 as Head of Communications. As Head of Communications, and later Director of Strategic Communications, Ms. Lockett and her team were responsible for all of the college's communications. In autumn 2014, Ms. Lockett set up the Mind Matters Initiative (MMI) alongside its then Chair, Neil Smith. MMI aims to make a difference in the mental health and well-being of members of the veterinary team. Ms. Lockett took up the role of Acting CEO in September 2017 and was appointed CEO in November 2017. Ms. Lockett is an Accredited PR Practitioner with the Chartered Institute of Public Relations and holds a degree in English Language and Literature from St John's College, Oxford, a postgraduate qualification in journalism, and diplomas in the History of Art, also from Oxford.

Ted Mashima, D.V.M., joined the Association of American Veterinary Medical Colleges (AAVMC) in 2008 and serves as the Senior Director for Academic and Research Affairs. In that role, he provides staff support for the following AAVMC Committees and Subcommittees: Academic Affairs, Research, One Health, Veterinary Educator Collaborative, and Primary Care Veterinary Educators. He also provides leadership and support for several mental health and wellness initiatives under way in the profession and interprofessionally. He has a bachelor's degree in zoology from the University of Hawaii at Manoa and a DVM from Colorado State University. He completed an internship in exotic animal, wildlife, and zoo animal

medicine at Kansas State University and a residency in zoological medicine, with a wildlife emphasis, at North Carolina State University. He is board certified in both zoological medicine and veterinary preventive medicine and he was recently inducted into the National Academies of Practice. Mr. Mashima is the co-editor of *The Rhino with Glue-On Shoes, and Other Surprising True Stories of Zoo Vets and Their Patients*.

Angelo McClain, Ph.D., LICSW, is the Chief Executive Officer of the National Association of Social Workers (NASW) and President of the National Association of Social Workers Foundation. NASW is the largest membership organization of professional social workers in America with 140,000 members. NASW promotes the profession of social work and social workers, and advocates for sound social policies that improve well-being for individuals, families, and communities. Dr. McClain previously served as Commissioner for the Massachusetts Department of Children and Families for 6 years, a position appointed by Governor Deval Patrick. While there, he oversaw a budget of $850 million and a workforce of 3,500 employees to address reports of abuse and neglect for the state's most vulnerable children, partnering with families to help them better nurture and protect their children.

Diana Nyirenda, M.A., is an aspiring Christian servant leader, administrator, professional counsellor, and child protection worker. She holds a bachelor's degree in business administration, bachelors of arts in guidance & counselling, and an M.A. of arts in Christian Leadership. She is currently working as Programme Associate, providing program support under Responsive Institutions and Citizen Engagement within the United Nations Development Programme, Malawi, in promoting accountability, civic engagement, respect for human rights, rule of law, peace, and democracy. She enjoys contributing to portfolio projects results and loves to serve her community through volunteering as a community counselor, Sunday school teacher, life skills coach, peer educator at workplaces, and by documenting. As a humanitarian worker, she is inspired to contribute meaningfully to transformational change in the lives of vulnerable and deserted communities nationally and internationally.

Deborah Powell, M.D., is dean emerita of the University of Minnesota Medical School and professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota Medical School, where she coordinates the medical school pathology curriculum. At the University of Minnesota, Dr. Powell instituted the medical school's Flexible M.D. program, an individualized model of medical education designed to be more adaptable to students' career and learning goals. Dr. Powell served as

chair of the Association of American Medical Colleges (AAMC) Board of Directors from 2009 to 2010 and was the first female chair of the AAMC Council of Deans in 2004. She was awarded the AAMC 2013 Abraham Flexner Distinguished Service to Medical Education Award. She is currently working on a pilot study of a new model for training medical students who want to go into pediatrics in a competency-based model that combines Undergraduate Medical Education and Graduate Medical Education. It is currently being tested in four U.S. medical schools including the University of Minnesota. Dr. Powell was elected to the Institute of Medicine in 2000.

Rajata Rajatanavin, M.D., FRCP, FACP, FACE, studied medicine at the Faculty of Medicine Ramathibodi Hospital, Mahidol University. He has dedicated his life to teaching, medical service, and research. His research is focused in two areas: iodine deficiency disorders and metabolic bone disease, specifically osteoporosis. Dr. Rajata became chairman of the Department of Medicine at Mahidol University in 1997 and has since shifted his interest to administration, becoming the Dean of Faculty of Medicine. During his term, he was successful in securing $300 million from the government to build a new medical school and university medical center. Dr. Rajata assumed position of President of Mahidol University in December 2011. The university is ranked first in the country by the Office of Higher Education and 34th in Asia by the QS International Ranking. He also served as Minister of Public Health of the Royal Thai Government during 2014–2015. He is now an Advisor to the Dean and Chairman of the Board of Ramathibodi Hospice and Elderly Care Research and Learning Center, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

Calli Schardein is a third-year medical student at the Oklahoma State University Center for Health Sciences. She was born and raised in Oklahoma and intends to practice as a general surgeon in Oklahoma. Mrs. Schardein attended Oklahoma State University for her undergraduate education and has her Bachelors of Science in Psychology. In her second year of medical school, Mrs. Schardein was elected the student government president and became a representative to the Council of Osteopathic Student Government Presidents (COSGP). At the end of her term, she ran for the national positional of 2nd Vice Chair of the Executive Board of COSGP. She has since filled that role as the Chair of the Student Wellness Committee and Coordinator of the Mental Health Awareness Task Force.

Siddharth Ashvin Shah, M.D., M.P.H., is the President of Greenleaf Integrative Strategies. Dr. Shah is a board-certified preventive medicine physician with expertise in community/workplace resilience, trauma-informed care and peace building, post-conflict leadership needs, disaster public mental

health, and cross-cultural health systems. Dr. Shah is a member of the disaster response community. Greenleaf currently serves the United States Agency for International Development Office of Foreign Disaster Assistance and the U.S. Office of Personnel Management. The firm seeks to support people who do good in the world and prevent unnecessary suffering. Dr. Shah received his B.A. in Religious Studies from Rice University. He completed his M.D. at Baylor College of Medicine, Houston, Texas, with additional training at the Karl Menninger School of Psychiatry, Topeka, Kansas. He completed his residency in Preventive and Behavioral Medicine and received a Masters in Public Health from Mount Sinai School of Medicine, New York.

Javaid Sheikh, M.D., M.B.A., is an internationally renowned medical executive and creative thought leader in global academic medicine and population health. During his tenure as Dean of Weill Cornell Medicine–Qatar (WCM–Q) since 2010, Professor Sheikh has pioneered and implemented innovative biomedical educational and research programs enabling WCM–Q to become widely acknowledged as a leading institution preparing "Global Physicians" for the 21st century. Dean Sheikh serves on a number of national health policy committees including the Qatar Council on Health Practitioners Board. Professor Sheikh also founded and co-edits *Innovations in Global Health Professions Education Journal*, providing an international platform for profiling conceptual and technological innovations in global health profession education. Prior to joining WCM–Q in 2007, Professor Sheikh built a distinguished career as a Professor of Psychiatry and Behavioral Sciences, Associate Dean, and Chairman of the Board of the Palo Alto Institute for Research and Education at the prestigious Stanford University School of Medicine and affiliated hospitals in California.

Carolyn Sommerich, Ph.D., M.S., BSME, is an Associate Professor in the Department of Integrated Systems Engineering at The Ohio State University (OSU) and also holds graduate faculty status in Department of Mechanical and Aerospace Engineering and the School of Health and Rehabilitation Sciences within OSU's College of Medicine. She is the director of the OSU Engineering Laboratory for Human Factors/Ergonomics/Safety. Her research focus is ergonomics and occupational biomechanics, with a special interest in intervention research to reduce exposures to risk factors for musculoskeletal discomfort and disorders; application sectors include health care, industry, and education. The research approach is participatory and interdisciplinary. She and faculty and student collaborators from orthopedics, design, radiologic sciences, mechanical engineering, and nursing have effectively partnered with imaging technologists, home health aides, paramedics, teachers, high school students, distribution center workers, manu-

facturing workers, and many others to investigate and address risk factors that affect their musculoskeletal health, task performance capabilities, and quality of work life. Dr. Sommerich is currently the Secretary-Treasurer of the Human Factors and Ergonomics Society (HFES), as well as faculty advisor for the OSU student chapters of HFES and the Institute of Industrial and Systems Engineers.

Zohray Talib, M.D., FACP, is Associate Professor of Medicine and of Health Policy at the George Washington University (GWU) Medical School in Washington, DC. Dr. Talib is a board-certified internal medicine physician and primary care doctor at GWU. Dr. Talib oversees Internal Medicine Residency's Global Health Program where she directs a global health course and mentors residents in global health research. Dr. Talib has more than 10 years of experience in medical education. Her research focuses on health system strengthening and health workforce issues both in the United States and globally. In particular, her interests include examining ways to scale up the global health workforce and linking investments in medical education to health outcomes. Dr. Talib received her Bachelor of Science in physical therapy from McGill University, Montreal, Canada, and her Doctor of Medicine from the University of Alberta, Edmonton, Canada. She completed her residency in Internal Medicine at the George Washington University Hospital. She is board certified by the American Board of Internal Medicine, and a Fellow of the American College of Physicians.

Richard W. Valachovic, D.M.D., M.P.H., is the Executive Director of the American Dental Education Association (ADEA) and President of the ADEAGies Foundation. He joined ADEA in 1997 after more than 20 years in research, practice, and teaching of pediatric dentistry and oral medicine/radiology. He is a Diplomate of the American Board of Oral and Maxillofacial Radiology and completed postdoctoral training in pediatric dentistry and dental public health. He previously served on the faculty and administration of the Harvard School of Dental Medicine and the University of Connecticut School of Dental Medicine. Dr. Valachovic has served as President of the Federation of Associations of Schools of the Health Professions and as Executive Director of the International Federation of Dental Educators and Associations. He is a member of the Washington Higher Education Secretariat. Dr. Valachovic earned his B.S. degree in 1973 from St. Lawrence University; his D.M.D. in 1977 from the University of Connecticut School of Dental Medicine; and a Masters in Public Health degree (1981) and a Master of Science degree in health policy and management (1982) from the Harvard School of Public Health. He completed a residency in pediatric dentistry at the Children's Hospital Medical Center in Boston in 1979.

Tim van de Grift, Ph.D., M.D., M.B.A., received his M.D. from Amsterdam University and his M.B.A. from Ghent University (Belgium). After finishing his Ph.D. from the departments of Plastic Surgery and Medical Psychology, psychiatry resident at the Vrije Universiteit University in Amsterdam. Over the past years, he has developed several projects at the intersection of arts, design, and health care. These projects include improving clinical observation skills through art, and teaching interdisciplinary skills and creativity using design thinking.

Meghan M. Walsh, M.D., M.P.H., earned her medical degree in 2001 from the University of Wisconsin–Madison and her Masters in Public Health from the Johns Hopkins School of Hygiene and Public Health in 1997. She completed her residency and Chief Residency in internal medicine at Hennepin County Medical Center (HCMC) in 2005. Dr. Walsh is an Associate Professor of Internal Medicine at the University of Minnesota School of Medicine, the Designated Institutional Official, and Chief Academic Officer at HCMC. Her main interests reside in patient safety and quality and resident education, and she serves as a Volunteer Site Surveyor for the Accreditation Council for Graduate Medical Education's Clinical Learning Environment Review program. Her current energy is dedicated toward the creation of a Center of Excellence for Integrated Learning at HCMC, and she is actively engaged in the redesign of interprofessional training, patient education, and employee development through blended learning.

John Weeks has been involved in the integrative health care movement for 32 years in various capacities as a writer, organizer, speaker, and executive. Since the mid-1990s, Mr. Weeks has produced the principal newsletter on policy and business of integration, now via the Integrator Blog. He produces related columns for The Altarum Institute, IntegrativePractitioner.com, *Integrative Medicine: A Clinician's Journal*, and the *Huffington Post*. Mr. Weeks attended Stanford University for 3 years, studying history. Academic institutions have four times granted Mr. Weeks honorary doctorates for his work. Three consortia in the field combined to grant him a Lifetime Achievement Living Tribute award in 2014.

Appendix E

Forum-Sponsored Products

GLOBAL FORUM ON INNOVATION IN HEALTH PROFESSIONAL EDUCATION SUMMARIES AND PROCEEDINGS

www.nationalacademies.org/ihpeglobalforum

- Interprofessional Education for Collaboration: Learning How to Improve Health from Interprofessional Models Across the Continuum of Education to Practice: Workshop Summary (**2013**)
- Establishing Transdisciplinary Professionalism for Improving Health Outcomes: Workshop Summary (**2013**)
- Assessing Health Professional Education: Workshop Summary (**2013**)
- Building Health Workforce Capacity Through Community-Based Health Professional Education: Workshop Summary (**2014**)
- Empowering Women and Strengthening Health Systems and Services Through Investing in Nursing and Midwifery Enterprise: Lessons from Lower-Income Countries: Workshop Summary (**2015**)
- Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes (**2015**)

- Envisioning the Future of Health Professional Education: Workshop Summary (**2015**)
- A Framework for Educating Health Professionals to Address the Social Determinants of Health (**2016**)
- Exploring the Role of Accreditation in Enhancing Quality and Innovation in Health Professions Education (**2016**)
- Future Financial Economics of Health Professional Education: Proceedings of a Workshop (**2017**)
- Exploring a Business Case for High-Value Continuing Professional Development: Proceedings of a Workshop (**2018**)
- Improving Health Professional Education and Practice Through Technology: Proceedings of a Workshop (**2018**)

NATIONAL ACADEMY OF MEDICINE PERSPECTIVE PAPERS

- Breaking the Culture of Silence on Physician Suicide (**2016**)
- I Felt Alone But I Wasn't: Depression Is Rampant Among Doctors in Training (**2016**)
- Defining Community-Engaged Health Professional Education: A Step Toward Building the Evidence (**2017**)
- 100 Days of Rain: A Reflection on the Limits of Physician Resilience (**2017**)
- A Multifaceted Systems Approach to Addressing Stress in Health Professions Education and Beyond (**2017**)
- Addressing Burnout, Depression, and Suicidal Ideation in the Osteopathic Profession: An Approach That Spans the Physician Life Cycle (**2017**)
- Burnout, Stress, and Compassion Fatigue in Occupational Therapy Practice and Education: A Call for Mindful, Self-Care Protocols (**2017**)

- Promoting Well-Being in Psychology Graduate Students at the Individual and Systems Level (**2017**)
- Stress-Induced Eating Behaviors of Health Professionals: A Registered Dietitian Nutritionist Perspective (**2017**)
- Breaking Silence, Breaking Stigma (**2017**)
- Breaking the Culture of Silence: The Role of State Medical Boards (**2017**)
- The Role of Accreditation in Achieving the Quadruple Aim (**2017**)
- Nursing, Trauma, and Reflective Writing (**2018**)